



EDUCATIONAL SUPPLEMENT
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When the dust settles . . .

After a General Election, the dust is meant to settle. The Grand Inquest of the Nation has taken place. The voice of the people has been recorded. A new mandate has been written, and in 1987 this means the reaffirmation of the values and strategies associated with Mrs Thatcher's brand of modern Conservatism.

Of course, that is what is meant to happen. The reality is a bit more messy. The mandate is flawed. Individual items in the manifesto are lumped together in a package, parts of which may enjoy widespread support while others have little popular backing. And the vagaries of the electoral system give the Government a thumping majority in Parliament from a minority of votes cast.

A thumping majority, nevertheless, is what the Government has got and the first observation to make about the prospects for education must be to emphasize what this means. It means that the Government's stance on such issues as the distribution of power within the education system is something which must now be accepted as the basis for future plans. This does not mean everyone has got to agree with it or refrain from pointing out the objections to it; but it does mean that the ground rules for debate are now different in important respects. It is not enough to reaffirm commitment to the status quo. A new status quo is now taking shape.

This has an obvious bearing on the dispute over the teachers' pay and how future pay levels should be determined. The election result has undermined the teacher unions' campaign of militant action. The National Union of Teachers seems to have recognized this: first priority must now be to make common cause with allies in the local authorities to bring as much constructive influence to bear on future developments as possible. As Mr Doug McAvoy observed over the weekend, this aim will not be advanced by disrupting the schools still more. For some, the penny has still to drop. Nothing could be more futile (or, for that matter, unprofessional) than the inner London teachers' strikes about redeployment which have continued this week. The NASUWT is currently reconsidering its position.

In the post-general election period, teachers' strikes are no longer a plausible weapon. If the teachers want to influence affairs, they will have to do so by the strength of the arguments they adduce and the extent to which they can demonstrate the professional wisdom on which they are based. The fact is the Government has seen off the teachers' unions. TUC-type teacher unionism is currently in retreat. Members have been drifting away and they will not be won back in present circumstances by militant action. This was apparent before June 11.

Teachers should react to Mrs Thatcher's third victory by coming to terms with the long-term social changes which lie behind it. The decline of old-style trade unionism is one of these.

For the NUT there are other sobering lessons to be learnt. The time must come when members question the built-in links between the NUT and the Labour Party. Why should teachers, only a minority of whom ever express the intention of voting Labour, be collectively represented by a union with a built-in, blinkered, Broad Left leadership? It cannot be disputed that in the matter of collective bargaining and the teachers' basic right to be represented in negotiations about pay this politically unrepresentative union leadership has spoken honestly for the great majority of teachers. But this coincidence of view is no reason for perpetuating a political absurdity. Non-Labour supporters in the NUT should begin to assert themselves against the Socialist Teachers' Alliance and insist on the union reverting to earlier conventions.

Mr Baker, for his part, now has to get down to the detail of the new policies which have been unveiled for the election. The new Bill which is being drafted has to be put together in double-quick time. Taking the power to lay down a national curriculum may turn out to be more complicated than it looks at first sight. Or rather, the consequences which have to be provided for may be far-reaching, both in terms of policing the curriculum and in providing legal redress for parents who believe it is not being delivered. No doubt the easy way out would be to restrict the Secretary of State's role to a declaratory one, but to do this would conflict with the larger aim of curbing and controlling the local education authorities.

Everything suggests that Mr Baker will try to limit his legislation to the specific requirements of the manifesto rather than introduce a complete new Education Act to replace and consolidate the 1944 Act. But patching has its dangers, especially when the Act which is being patched up is based on the principle of local education authority provision and administration which would seem to be inconsistent with most of the new patches.

Lord Young's appointment at the Department of Trade and Industry is clearly going to be of great significance for education, as well as for the big cities with the more acute social problems. Lord Young is not a man to be underestimated. Whatever the origin of the city technology colleges, it would be surprising if he, with his earlier connections with ORT (The Organization for Rehabilitation through Training) did not look for ways of linking up his ideas for urban renewal and the revival of business, small and large, with the creation of "lighthouse" institutions like

CTCs in run-down areas. Already the talk is of setting aside the specific proposals set out last summer in the CTC prospectus, and looking for developments along the lines of an American community college, open all hours, serving a much wider clientele than simply that of a traditional secondary school.

The fact that speculation on these lines is possible is a measure of how open the future really is. Election promises have to be endowed with a spurious precision. Now the campaigning is over, everything is up for grabs. Lord Young, Mr Kenneth Baker and Mr Norman Fowler between them can draw on the funds of the DES, the DTI and the MSC and if they want to make the CTCs into spearheads of the attack on inner-city poverty, they have all the resources they could need. They would not have the co-operation of the local authorities. But in the post-election world, they will be prepared quite simply to by-pass them.

Giving schools - governors and parents - the right to opt out of local authority control will also present a major legislative challenge (not to mention possible trouble in the House of Lords). The expectation must be that when the Secretary of State draws up the regulations he will insist on setting potential opt-outs a pretty stiff examination, not just in terms of majority votes, but of financial and managerial competence. It may well be that this particular election promise is more important for its dramatic demonstration of faith in parents and the principle of privatization than as an immediate method of changing the education system.

Local financial management will also need legislation if it is to be made general, and to be conducted according to rules laid down by Elizabeth House. This need not necessarily be particularly controversial though, once again, the small print of the regulations will be important in determining how funding levels are to be established.

The departure of Mr George Walden and his replacement by Mr Robert Jackson means a new junior minister for higher education to carry through the radical changes promised for the polytechnics and colleges and the new "funding councils".

Mr Walden had great ability and a forceful and entertaining pen which he wielded in defence of right-wing causes. But he never hid his impatience with those who disagreed with him. To make the National Advisory Body work, ministers had to be prepared to treat local politicians seriously. This he could never be bothered to do.

Mr Jackson - ex-All Souls, ex-MEP - has impeccable scholarly credentials. He will need all these and a good deal more if he is to lift the gloom which now hangs over higher education.

Second opinion Ad hoc way of learning to lead

With the outcome of the election known, let us change Government to one which will improve nations' schools.

Compared with almost any company and most other public organizations, education is a contrast. We are almost singularly only area where ongoing particularly management training so ad hoc and unavailable.

Colleagues in industry and commerce are astounded that no provision is made and agreed to by the Government for the privilege of enhancing their effectiveness. A mark of every company devoted to the success of British industry over the few years has been training particularly for senior managers.

Management training should exist for all the 35,000 to 40,000 who are in the authority tertiary development unit, is to schools and for those who will actually take their places.

When the National Development Centre for School Management was set up some years ago, opportunity was recognized. It has been the concentration of research and talk rather than the Reinforcement came in 1986 from Education Support Grant for management training as a priority. Credit is due to those education authorities and training institutions which have begun to ramme - a small start has been made.

The logistics of the challenge daunting - how can they be met? of a national training centre for residential course provision do match the reality of either resources or needs.

What is required is a national co-ordinated framework, locally delivered - possibly with a national organization to provide support, i.e. a national in-service providers. The partnership of these involved - namely the I.E.A.s, professional associations (it should be General Teaching Council) in-service providers - will not form an advisory committee.

The programme should provide main elements. Senior management education require training in specific skill areas - research has shown to be almost identical to the industry and commerce - and support for management implementation of their own institution: talking the problems encountered, planning, management of change, testing, new ideas, evaluating progress.

Such support is perhaps best as a local group with a tutor-approach is now being tried by in-service courses and has been extremely successful in company courses.

Successful practitioners, head advisers could contribute as experienced tutor-advisors on a very effective basis - as at the North-Regional Management Centre at the gate.

While the American model of promotion to headship is based upon a highly theoretical master's degree, it is of questionable value, a degree of diploma for those who successfully undertake management training courses is worth considering. This optional addition would be nationally recognized, and an appointment committee a useful indicator of suitability for headship.

Nell Ransom is principal of Valley College, Leicestershire and founder of the Centre for the Study of Comprehensive Schools.

IN BRIEF Tutored retorts

Teachers could help parents discuss issues more effectively with their argumentative children by equipping them with debating skills. Mrs Doris Rival, head, chair of the National Association of Head Teachers' health education working party, suggested last weekend.

She was speaking at a conference of ADFAM (Aid for Addicts and Families) - a group that provides support and information about drug and solvent abuse.

Top of heads

Mr John Sutton, head of Queen Elizabeth secondary school, Corby, is to be the president of the Secondary Heads Association from September. SHA's 75-member council elected him to fill a gap left by the appointment of Mrs Anne Jones, head of Cranford community school, Hounslow, to be head of educational programmes at the Manpower Services Commission.

County post

Ms Margaret Maden, principal adviser to the Inner London Education Authority tertiary development unit, is to become deputy county education officer for Warwickshire education authority.

Aids alert

As Aids spreads, staff at every residential home for disturbed children should expect to meet a pupil who has the disease, the National Union of Teachers has warned.

But neither educational nor social services should reject a young person with Aids or the HIV virus, the union said.

Grammar bias

Birmingham City Council is to be challenged in the High Court for providing nearly twice as many grammar school places for boys as for girls. It tests roughly equal numbers of children at 11-plus but provides only 210 places a year at the two girls' schools against 390 for boys. The authority says the situation stems from reorganization in the 1970s.

Ban unlawful

Dr Kuba Assegai, the governor who was banned from Brent schools last October after he allegedly told pupils that America had designed an "ethnic" bomb to be aimed at the black population, has won his High Court appeal. Lord Justice Woolf and Mr Justice McCullough ruled that the north London council acted unlawfully.

First for book

For the first time, a children's book has won the Somerset Maugham Award, which encourages young writers to travel. Janni Howker's novel, *Isaac Campion*, is this author's third award-winning work.

In-service kindling

The National Union of Teachers is urging the Government to set up a development fund for in-service training, with a budget of £2 to £3 million a year, to spark new ideas and promote good practice.

Abuse awareness

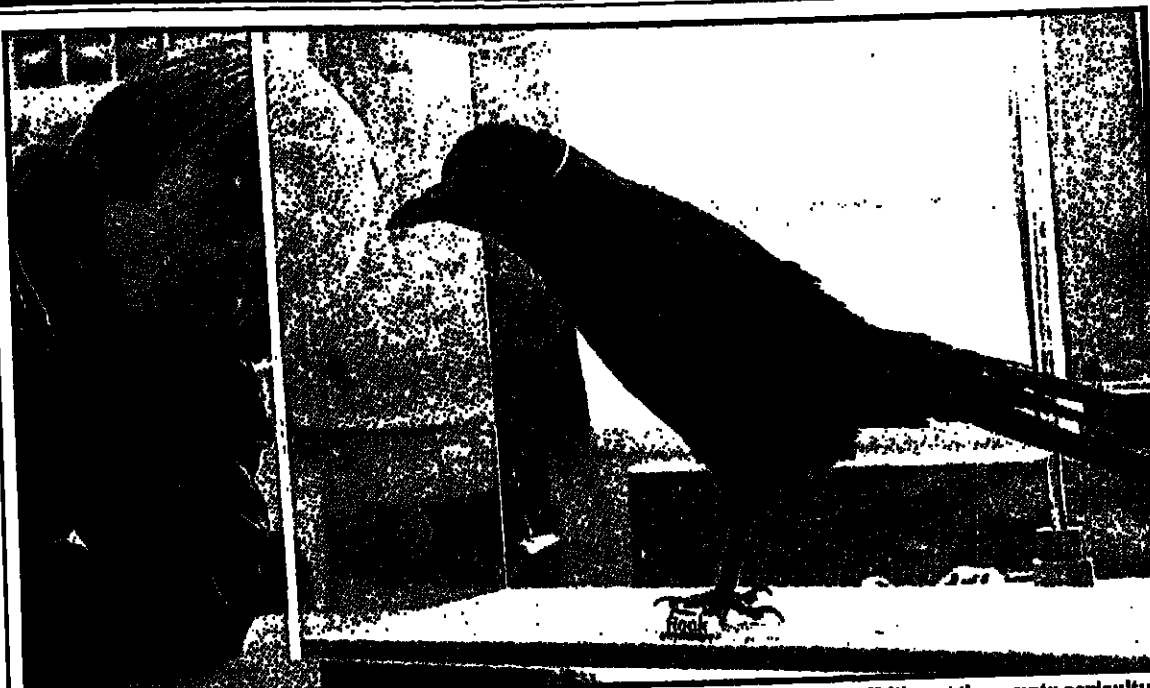
The National Union of Teachers has called for the expansion of in-service training to help teachers spot child abuse victims.

Responding to a DES draft circular, the union says guidance is needed on detecting abuse, recording and reporting procedures, and relating to pupils and parents.

Offices to labs

Westminster School, the independent school for boys situated in the shadow of Westminster Abbey, has paid £2.5 million for a new science laboratory block, to convert into science laboratories. A further £1 million will be spent on refurbishing during the next few months.

NEWS



A look at a rook: more than 2,500 Lancashire schoolchildren visited the recent farm birds exhibition at the county agriculture college in Preston.

Pilot scheme deadline extended

by Ian Nash

The Government is to invest more than £1 million in a two-year extension to the pilot scheme on records of achievement.

The decision, which has yet to be announced, was reached after the steering committee for the nine pilot projects warned that vital information would still be lacking when the Education Support Grant for the present three-year scheme runs out in March next year.

Some issues are extremely sensitive, such as the extent to which the Government may prescribe what records must include. Local education authorities are pressing for national guidelines to be flexible enough to encourage home-grown initiatives.

The Government, however, has not postponed its timetable whereby all I.E.A.s should be ready for the introduction of records of achievement in 1990. Miss Elizabeth Hodgkinson, chairman of the steering committee at the Department of Education and Science, said this week.

She told a conference on records of achievement, organized by The Industrial Society at Regent's College in London, that the Government would clarify the records' relationship with the GCSE and subsequent use of them in the Youth Training Scheme and the Certificate of Pre-vocational Education.

It was on the issue of the national guidelines that delegates were most anxious, and many who have been fearing that local schemes would be thrown into turmoil in 1990 felt that Miss Hodgkinson had given them little reassurance.

Professor Desmond Nuttall, chairman of the committee's evaluation team, said: "I personally believe that records of achievement could be seen as the delivery mechanism for the national curriculum. It could offer a framework whereby the national curriculum could be monitored."

Some teachers press pupils so hard to say personal things on records of achievement that it is almost "an invasion of privacy", Professor Nuttall added.

He described some pitfalls, details of which will be given in an interim report to be published this autumn.

"It is a question of who controls the information that goes into the records, if we are putting children at risk through this process, what advice should we give them?" he asked delegates.

While records should emphasize achievement, a danger was posed if employers, parents and professionals were to "read between the lines" particularly on questions of attendance and punctuality. "If you cannot say anything good about punctuality, does anything good about punctuality?" this means they are poor attenders," he said.

Brent seeks vote of confidence

by James Melkile

The London borough of Brent, faced with serious staff shortages in schools and education offices, this week launched a 16-point plan to win back the confidence of parents, staff and the Government.

Fifty out of 1,200 teaching posts in primary schools may still be vacant by September and only a third of the planned 150 "race equality" teachers attached to schools have so far been appointed.

But Mr Michael Stoten, the new chief education officer, hopes a draft consultative paper outlining targets for "equality and excellence" will result in major advances by next summer.

These include agreement in principle on secondary school reorganization for 1989, clear understanding and approval of curriculum principles, a new management structure, programmes for children with special needs and community education, and a review of non-teaching staff in schools.

The document is in part a response to the HMI report on the borough published in April, which Mr Kenneth Baker said demonstrated the authority's "irrelevant policies and incompetent management".

The new proposals, which depend on recruiting management staff "of calibre and commitment to our aims", would set up four divisions: for curriculum and training, operational management, community education, and other administration.

The much-publicized equal opportunities policies, which escaped blame from HMI, will continue. Indeed Brent may have to bear another £750,000 if an application to the Home Office for a Section 11 grant is refused.

The Brent proposals also promise a thorough review of staff development. HMI said too much teaching in the borough was unimaginative, with low expectations of pupils, although Mr Stoten was this week keen to emphasize the enthusiasm of teachers in the classroom.

Secondary schoolteachers could face compulsory redeployment next year. There are 80 "surplus" staff in various schools and voluntary measures will not totally solve the problem of filling vacancies in some parts of the borough.

Mr Stoten, who has been in the job five weeks, called the new plans "systematic and rigorous but with a burning sense of urgency".

"There are a lot of excellent things happening in Brent education and we intend to build on these."

The proposals go to the borough education committee next Thursday and consultation will last until December. A detailed response to HMI is being prepared separately.

Select postscript

The Commons Select Committee managed to get out brief reports (pages 10 and 11) on inquiries outstanding when the most irresistible gullion of all came down: the slim volume on progress since the 1981 Act in meeting special needs still leaves a yawning gap to be filled.

If it had known then what we all know now, maybe the Select Committee wouldn't have spread its precious time so luxuriously over the two-year inquiry into primary education and delayed work on a potentially far more useful area until it was already under the gun.

There were particularly high hopes of the Committee's special needs review because the evidence it was expected to consider, and the visits it might have made, promised to provide illuminations woefully lacking ever since the Act came into force in 1983.

One of the Warnock recommendations was that the Government should set up a special advisory National Advisory Council to monitor progress and plan for the future of special needs. It has not done so.

search reports commissioned by the DES.

The result has been a most serious lack of both information and guidance at a national level. HMI has not yet reported and although the research studies were available for the Select Committee, they are not yet published and the Committee had scant time or space to do them justice.

Professor Peter Mittler's fierce warnings about the effect of CRIST on special needs teacher training courses are scarcely alluded to; it is regretted that there was no time to examine the Department of Health and Social Security about the complex areas where co-ordination was found wanting. It was not possible in the time available to study further education, one of the Warnock priority areas also neglected in the Act.

The Select Committee does have some hard-hitting observations to make, however, and most of them are directed, fairly and squarely at the Department of Education and Social Security.

"Singled out for criticism are the lack of general guidelines about the nature of integrative practice; of departmental information about special needs provision for under-fives (again a Warnock priority); and of any systematic knowledge in the Department about the nature and extent of provision for disabled children."

call for extra resources and doubts about the effect of bench-marks, the report is more muted.

On integration, the Committee and its advisers seem to be back-tracking from the definitions offered in Warnock. Perhaps with an eye to parental fears and professional turf protection, the emphasis now is on parental choice as a qualifier of strategic i.e. planning, retention of some special schools, and shared social activities as an acceptable alternative to placement in an ordinary class.

Maybe the cautious note is justified, given the level of resources and competing pressures, but many people are going to be disappointed by what is missing from this rushed report.

Archimedes rides again

Archimedes acquired a whole new currency in the world of computing with this week's launch of a new BBC Acorn machine, the Archimedes 300. (See the 32-page Computer in Education Extra, which starts on page 49).

Potentially the most important new product for schools since the first BBC micro, it seems to have stirred deep

duced instruction set (computer) comes ready-stamped with the BBC seal of approval. Research Machines are issuing tempestuous statements on this "unethical and misleading" move (page 3). Clearly the educational field is still important to the manufacturers.

But as the war rages on, the decision in the end will rest with the teachers - and on how the new 32-bit micro is received in the classroom and whether its full potential can be achieved at a price they can afford. Acorn is doing all it can to entice the schools, with discounts, subsidies and offers of free upgrade paths. The next move will be to see how the product works, and then to watch the response to the DES and the DTI, with Kenneth Baker back, and Lord Young, ensconced at the DTI, we can surely expect more in the pipeline for information technology.

no comment

"Dear Colleagues: I occasionally find that 'We have old plans' which are beyond repair. It may be that these could be used within music departments. I should be grateful if you would indicate if you may be interested in having such an old instrument redirected to your school."

Letter in all heads of music in secondary schools in April from senior music adviser.

to be sent to the three major

Elsewhere, apart from the

the new CTC technology

News focus on

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HMI hangs in the balance

In recent months, HM Inspectorate has been attacked, directly or indirectly, by various individuals and pressure groups on the grounds that it is part of an uncritical educational establishment. For example, in December 1986 the Hillgate Group issued a "manifesto", *Whose Schools?*, which made a number of interesting suggestions for "reform" in education and the elimination of "egalitarian propaganda".

Part of its onslaught on "bureaucratic patronage" was a harsh judgement on HMI: "... the time has come for a full and independent survey of the inspectors, whose role has undergone considerable unsupervised (sic) change since the institution was first established in 1839. The only recent official survey is entirely bland, and seems to permit and to condone a far wider range of activities on the part of HMI than has ever been expressly authorized by Parliament."

"We believe the time has come to define procedures, criteria and accountability of the inspectors, who are as likely as any other section of the educational establishment to be subverted by bureaucratic self-interest and fashionable ideology."

There is one very important inaccuracy in the above statement: the "bland survey" is referred to in the notes of the Hillgate document as *The Work of HM Inspectors in England and Wales* (DES 1983), but this is not the survey; it is merely a follow-up to the survey called "A Policy Statement by the Secretary of State for Education and Science and the Secretary of State for Wales on the Work of HM Inspectorate in England and Wales".

Presumably the Hillgate Group had not read the *Study of HM Inspectorate in England and Wales*, which was the report of the scrutiny of HMI co-ordinated by Sir Derek (now Lord) Rayner appointed by the Prime Minister in March 1983, was extremely searching and far from bland in its style. Indeed, since its inception the inspectorate has been examined critically on a number of occasions (the Rayner Report makes considerable use of the very critical Select Committee Report of 1968, for example), and the really interesting question about this uniquely English institution is why HMI has survived so many reviews.

This is one of the issues we have tried to address in our book *HMI* (published this week by Routledge & Kegan Paul). It is certainly true that the function of HMI has changed enormously since 1839, and it is very fair to ask whether it still has a useful role to play. But, as the Hillgate manifesto illustrates, the work of HMI is not well understood by the general public and even by professional educationists.

The Rayner Report justified the existence of HMI largely in terms of its professional expertise: civil servants in the Department of Education and Science are expert administrators, not

expert educationists, and there is a good deal of evidence to support the view that advice given to Government on education would be poorer without this kind of professional expertise.

As a result of the Rayner Report, the inspectorate expanded at a time when the rest of the education service was declining. There are now approximately 460 HMIs led by senior chief inspectors, Eric Bolton, and seven chief inspectors based in Elizabeth House. There are also 60 staff inspectors who have national responsibilities of three kinds: for subjects such as English or engineering; for particular aspects such as special educational needs; or for phases such as primary.

One of the most common mistakes, among teachers and other educationists as well as the general public, is to confuse the work of HMI with that of local education authority inspectors and advisers. Both groups are anxious to be distinguished from the other (for a variety of reasons), but the confusion remains.

A reason for this may be that most HMIs are not based at DES headquarters in Elizabeth House, but in the regions (divisions as they are known in the inspectorate). Whereas HMIs have a national planning role, as well as being the "eyes and ears" of the Secretary of State, i.e., inspectors have a more parochial concern for the day-to-day running of the education service in their authority.

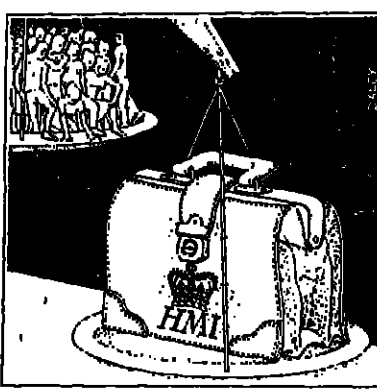
One significant change in the position of HMIs has occurred since the Secretary of State's decision in January 1983 to publish all HMI reports. This has made HMIs more visible and their work more controversial.

Even before 1983, however, the emphasis of HMI work had moved away from isolated inspections towards (computerized) programmes of inspection resulting in such national surveys as *Primary Education in England 1978* and *Aspects of Secondary Education in England 1979*. Such national reports have assisted the inspectorate in improving practice on a much wider scale.

Perhaps even more significant has been the work of HMI in the field of curriculum planning. From the early 1970s, inspectors were having internal discussions on the nature of subjects and their contribution to the curriculum; in December 1977 they published *Curriculum 11 to 16* which was highly critical of many curricula in secondary schools based on core plus options thinking; they proposed instead a common curriculum based on areas of experience. That was the first of many contributions to the curriculum debate, and many schools have responded to these initiatives.

The series, *Curriculum Matters*, seems, however, to have been ignored by Kenneth Baker in his recent pronouncements on a national curriculum. The part to be played by HMI in the new national curriculum game has yet to be established.

The position of HMI vis-à-vis the



The professional independence of the inspectorate is under fire again from the radical Right, but the Education Secretary has more demands to make on its overstretched ranks. Denis Lawton and Peter Gordon assess the dangers

DES and the Government is a delicate one. Tradition gives HMI a certain professional independence, but it is not unlimited. The senior chief inspector (SCI) has the right of direct access to the Secretary of State (without going through his bureaucratic superior, the permanent secretary of the DES), but HMIs have no right to criticize Government policy.

Nevertheless, some HMI reports in recent years have been remarkably outspoken on the effects of Government policy on the state of the schools.

For example, HMI produces an annual report of i.e., expenditure which frequently associates unsatisfactory standards with inadequate resources. On at least one occasion, in 1984, vigorous attempts were made by local politicians and their representatives in Westminster, to suppress the publication of this information.

A more recent example of this professional independence occurred in the case of the general inspection of Brent I.e.A. It was generally assumed that the team of 50 HMIs was being "sent in" to criticize the much publicized anti-racist policies in the authority; HMI in its report had a number of harsh judgements to make, but Mr Baker did not get the answer he obviously wanted on the Brent anti-racist and anti-sexist policies.

The publication of reports has not only made the work of HMI more controversial, it has made the inspectors more vulnerable. On many occasions they have decided not only to publish the results of their inspections and surveys but also to reveal the methods used.

This is a well-meaning step. For example, in the recent *Quality in Schools: The Initial Training of Teachers* (May 1987), Appendix 1 was devoted to "The Methods Employed in the Survey". This is a move away from an authoritarian stance of superior knowledge - part of the mystique of HMIs was that they simply knew a good school when they saw one (they picked up the "feel of quality" as they entered the building).

But now social scientists can compare HMI inspections with rules of ethnomethodology, and HMI survey techniques with established conventions for sampling, etc. Thus HMI judgements can be challenged on methodological grounds as well as in

terms of factual accuracy. Some look back nostalgically to the days when they could make their judgements and pass on.

The role of inspectors is changing other ways. They are increasingly involved in education, and in the field of education they have even become teachers. The Council for the Accreditation of Teacher Education (CATE) very closely with HMI, and heavily on HMI reports of education institutions.

To cope with these extra responsibilities, the number of inspectors increased in recent years, but the number is still small in relation to the range of tasks they are now performing.

One of the dangers we see in our book is that of the inspectors being overstretched and threatening to keep up to date. A stable existing structure is the provision for study leave and aspects of staff development. HMIs complain that they do not have time for "essential" reading.

It is noteworthy that many countries, including China, are increasing interest in developing professional as contrasted with bureaucratic inspectors. And nothing about sex and was forever increasing centralization in the Bill banning it - whether for teachers, pupils or parents was never quite clear.

Mr Bruinvels was not everyone's cup of tea, but he was the most effective opponent Mrs Rumbold and her boss, Mr Baker, had. Mr Kinnock please note.

Professor Denis Lawton is head of the University of London Institute of Education; Professor Peter Gordon is head of the Department of Humanities at the Institute of Education.

Don't boycott annual meetings, urges Joan Sallis

Teacher, please listen

To one who knows me, who has heard me speak, read what I write, or above all noted what I have done, will doubt for a moment my feeling for teachers and my identification with their cause. What is more important, the Campaign for the Advancement of State Education, which I am privileged to chair, has been unwavering through three bitter years in its public support for the teachers' case for decent salary levels, their right to negotiate, and the priority given to the vital service in which they have invested their professional skills.

We have written and spoken many strong words to ministers in your cause, which is also ours, we have rallied parents both locally and nationally to show their solidarity with teachers, and we have mobilized the justice of your case in all the ways open to us. Perhaps therefore I may be allowed to say how troubled I am - and I speak for our committee who asked me to write in this way - about what seems a sadly misguided attitude to this 'term's governors' meetings with parents, which the National Union of Teachers and other unions are advising their members to boycott.

I know how battered and bruised most teachers feel. Apart from their battles over pay, they have had to suffer a constant stream of negative comment from politicians and the media, while every gimmick launched by politicians seems to be based on evil hostility to state education. We must stick together in the face of so many threats to the service, and the children in it. By sending invitations to parents, meetings, you will give all the wrong messages to parents, many of whom already have a sense of rejection because of the withdrawal of their school contact during the term. You will also be playing into the hands of those who want to divide us.

For the teacher of Mr Baker, and his colleagues have shown a readiness to listen and to negotiate in relation to which, since the beginning of the school year, the campaign has shown that



Joan Sallis

ways in which headteachers have been distanced from the rest of the profession. In the months and years ahead, we may have to fight threats to public education which will make what has gone before seem like children's games. People will be taken up onto mountainsides and shown the kingdoms of power and advancement. Efforts will be made to entice schools away from local control, and if the first inducements offered don't bring them out in sufficient numbers, believe me, they will be improved. Teacher will be against teacher; parent against parent.

One doesn't know which to fear for most, the schools which opt out and expose themselves to the dangers of the unknown, or those which remain, to face the all-too-familiar process of watering down the soup every year. Who are these once-so-fond parents who have been waiting all these years to attack you? What is going to make them go brown? If the odd one does speak out of turn, haven't you enough confidence in him and the responsible authorities of your heads and governors? Our presence here is surely your best guarantee that people believe in you. I hope, and I think, that you will be able to persuade them to stay.

Interests and problems, we work together, we know we can't win our battles without you. So please have to get back onto that track.

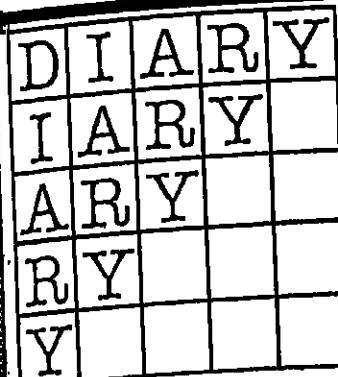
Other things worry me too. Some headteachers are giving up to small attendances of parents and evidence that some are not trying hard to attract parents in. It is with malice, but it reflects your attitudes to the whole operation. Just as I know the reasons for teachers' boycott, and they are many, but that isn't the point. We need to build partnerships with parents more urgent, and to start this prize badly in no way to promote.

Many wise heads will be hard to help make these meetings success, supporting their own effective publicity, giving their own subliminal message, parents have great respect for you, take their cues from you. Don't realize that well-attended meetings are the best defence against what you are in education, as in politics, the good against the destructive minority.

I don't regard the 1986 Act as the series of events which have undermined local education; it is the threatened teachers, and the schools. It is to me the culmination of much older historical processes, unlikely to go away than I feel it is supported by all parties. It is a stronger voice for the school, and local service is made up of schools, save local government where the government can't give itself. It is a framework for rebuilding of the network and making strong new attitudes.

Please give it a chance. We will support you, always, and we will continue to do so in the future. I think we surely face. But please make it so hard.

Joan Sallis chairs the Campaign for the Advancement of State Education.



House moves

Welcome back Ann Taylor, the Labour victor (just) at Dewsbury. Ms Taylor was Mr Kinnock's number two for a short while in the days when he was shadow education spokesman. She blotted her copybook a little when she went round telling anyone who would listen that Roy Hattersley was the only man to lead the party. Not surprisingly, she was quickly shunted out of the Kinnock office and went on to lose her Bolton seat in 1983.

The papers are now describing her as a Kinnock loyalist - which just goes to show how quickly politicians change their minds.

Not coming back is Peter Bruinvels, one of the few Tory casualties. This is excellent news for Mrs Angela Rumbold who was given a hard time by Mr Bruinvels when she was standing in the Commons. He had a bee in his bonnet about sex and was forever putting down amendments to the Bill banning it - whether for teachers, pupils or parents was never quite clear.

Mr Bruinvels was not everyone's cup of tea, but he was the most effective opponent Mrs Rumbold and her boss, Mr Baker, had. Mr Kinnock please note.

Master's muse

Oh dear, oh dear, what is to be done? Two weeks ago we reported that 17-year-old Andrew Simons of the Crypt School, Gloucester, had won the Young Poet of the Year competition complete with £180 cash prize. Well, the money should in fact be going to a lady called Suzanne Vega.

The snag is that she isn't that young (mid-thirties) and she's a foreigner. Furthermore, she hardly needs the cash given the sales of her last two records.

Ms Vega is a seminal influence on Master Simons. Actually she's more than an influence - "source" might be a better word. To spare his blushes we won't reprint his winning poem or the song by Ms Vega to which it bears an uncanny resemblance, but take our word - they are almost identical.

To be fair to the judges, it must be said that they awarded the prize to Andrew because of his "musical ear".

Age before talent

West Glamorgan education authority clearly doesn't want youth to triumph over experience when it comes to grabbing incentive allowances on offer from October as part of the Government's "generous" pay settlement. Mr Baker intends that the new £800 allowances should be used in rewarding outstanding classroom performance, although he wants advice on how to pick the lucky few.

Staff-room lotteries have been facetiously suggested in the absence of any merit payment system for appraisal. But West Glamorgan is considering a system of rewarding by ability - that is ability to grow old gracefully.

Heavier is age-related testing. To qualify for a £800 allowance a teacher would have to be at least 37 and have been five years on the maximum of the main professional grade (or in Burnham, for example, according to one scheme suggested in a county council discussion document).

To qualify for the £1,000 payment a teacher would have to be at least 48 and have received a £800 allowance for at least five years. Teachers in line for £800 payments would have to be 37 and have received the "second stage" allowance for at least five years.

Dancing in step with the community

From the outside, there appears to be nothing special about Rushey Mead school in Leicester, an 11 to 16 comprehensive serving a largely Asian population.

But to walk inside is to enter a kaleidoscope of activities that colourfully reflects the life of the local community.

Drop in this week and you will find two artists running workshops in textiles and other crafts. On Monday, two Indian dance troupes were working with the pupils.

On another occasion you may find youngsters discussing the impact of information technology with local representatives of Walkers Crisps. "There is very strong support within the school and the community to try to have the school as a facility and a facilitator for community development," Mr Steve White, the head of Rushey Mead, said. "The community links infuse the whole curriculum."

This week, the school's success has been acknowledged by the national Schools Curriculum Award scheme. The schools receiving awards - 215 out of the 287 who entered - will be able to choose from a series of especially commissioned works of art and can use the award symbol on their stationery.

The scheme is sponsored by the Government and private industry and administered by an independent educational charity on behalf of the Society of Education Officers and the Association of Directors of Education in Scotland. It recognizes schools in which have played a significant role in their communities and used locally available resources.

This is the second round of awards to be announced since the scheme started five years ago. "We hope that the awards will give a fillip to the morale of the schools and give the public a better appreciation of the work so many schools are doing," Professor John Tomlinson of Warwick University, and chairman of the scheme, said.

Rushey Mead school is already well-known to the north Leicestershire community through its open-door policy and after-school facilities. A sports hall and gym is open to the public every night. On Thursday and Friday evenings more than 400 pupils attend Gujarati classes and weekends are free for celebrations such as Indian weddings.

Many of the school's activities also cement links with the outside world. Optional Gujarati lessons have started and it is hoped other community languages will be introduced. Religious and cultural festivals are celebrated with the local community centre and later this year the school plans to host a major festival organized by the Hindu Mission.

Rushey Mead has also played an

important part in setting up the Leicester-based Glencroft Art Community Association. The two community artists are currently in residence for a fortnight.

The industry links have been encouraged as part of the School Curriculum Industry Project. Close contacts with the nearby Walkers Crisps company have resulted in work experience for pupils and joint in-service training ventures.

Enthusiasm for the locality and a belief in local links are the hallmarks of another very different award winner - Thornbury primary school - a 590-pupil, purpose-built, open-plan school on the sprawling and, in parts, relatively impoverished Estover housing estate in Plymouth.

Community representatives - the police, lollipop ladies, doctors and nurses - come into school to explain their roles and stimulate discussion, and visits are arranged to local places of interest.

Further links are encouraged through a conservation project to landscape areas of the school grounds. A natural meadow and an environmental pond to attract a variety of flora and fauna are planned.



Rushey Mead has become a cultural centre as well as an educational one

Home-school links are established even before a child joins the school and the partnership with parents is maintained throughout his or her school career.

Parents are encouraged to come into school at any time. They are closely involved in school projects and have just begun a paired reading scheme with infants and lower juniors.

Thornbury school's enthusiasm for tackling topics and issues from a variety of angles is encapsulated in its almost totally thematic approach to learning. (Juniors have some separate timetabled lessons in maths and games.) Last term, all curricular areas

were focused on a fiction-based project.

Flexibility is a key to the school's ethos. Timetabling is loose enough to allow children to spend a bit longer on a piece of work if necessary. Team teaching means pupils in any one class might see up to four teachers for different topics each day.

Mrs Liz Tarr, the school's head, said: "School is not just about learning facts but about a whole set of attitudes and values you have for life." Links with the community were vital, she stressed: integration not only benefited pupils' education but gave them much greater confidence.

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GENERAL ELECTION

Here and opposite, *TES* staff analyse the aftermath of last Thursday's poll as the Government prepares to put its manifesto pledges into action

Tory plan to lure investment and industry by breaking local control

by Barry Huggill

Civil servants in the Department of Education and Science were working on the contents of Mr Kenneth Baker's major Education Bill well in advance of the general election.

The first fruits of their labour will be unveiled in the Queen's speech on June 25. A Bill will be presented to the Commons in October and it could receive the Royal Assent any time between Easter and September of next year.

It is understood that senior civil servants at the Department of the Environment were furious when they discovered that their DES colleagues were drafting legislation to allow schools to opt out of local education authority control without prior consultation with them.

The opting out proposal has serious implications for local government finance which is the responsibility of the D of E, not the DES.

The new Bill will not replace the 1944 Act, but be additional to it. Its operation will drastically reduce the power of local education authorities.

L.e.s.s. will lose control of polytechnics and find their hold over schools reduced as heads and governors are given control of budgets. The Government, not the local authorities, will determine what is taught in schools through the national curriculum.

And parents unhappy with their local authority will have the right to seek direct funding for their school from the DES.

A further section of the Bill will allow London boroughs that so wish to run their own education service free of the Inner London Education Authority. It is already clear that Westminster, Wandsworth, and Kensington and Chelsea will take up the option.

Major problems getting the Bill through the Commons are not anticipated, but some difficulties could be met in the Lords. The Bishop of London, Dr Graham Leonard, has pledged opposition and could expect support from some of his colleagues. There is no reason to believe, however, that their lordships will force significant changes to the legislation. Baroness Hooper, the new Under Secretary for Education, will be responsible for steering the Bill through the Lords.

Mr Thatcher has made it clear, in a number of television interviews, that her Government will give prior attention to the rejuvenation of the inner cities.

She believes that local council control of the large cities must be broken before industry can be persuaded to invest. To this end, Lord Young has been moved to the Department of Trade and Industry and, in effect, is minister for the inner cities.

The power of Labour local authorities will be removed through the creation of Urban Development Corporations, which will take from the councils the responsibility for planning.

The Government is confident that by the end of the decade a network of at least 20 city technology colleges will be established. The creation of development corporations will remove

the obstacle of Labour-controlled councils refusing to give planning permission for CTCs; that power will rest with the corporations.

Lord Young was chairman of the Manpower Services Commission and his interest in education and training is well known. It would be surprising if the DTI under his direction was not to take an interest in the fare on offer in the new technology schools.

Mr Cyril Taylor, the man charged by Mr Baker with the responsibility of finding sponsors and sites for CTCs, welcomed the appointment of Lord Young. "It is a great boost for the CTCs," he said.

Mr Taylor anticipated that the role of the colleges would be widened to provide industrial and off-site training for youngsters on MSC schemes. And he speculated on their eventual transformation into all-embracing institutions along the lines of American community colleges "providing a 24-hour educational service".

It is too early to speculate on the number of schools that will apply to opt out of the l.e.a. system. Many small secondary schools faced with closure may be assumed to see independence as an escape route.

Mr Baker said during the election campaign that he would have to be convinced that a school was viable before he would consider awarding grant aided status.

Mr Stuart Sexton, a former political adviser to Sir Keith Joseph, claimed on Monday that the opting-out plan was drawn up some time ago while he was at the DES.

His current worry is that Mr Baker "will be too cautious". He fears that for political reasons the minister will favour schools in inner-city areas rather than those in "the true-blue shires".

Mr Sexton suspects that initial demand will come not from the inner cities but from small schools facing closure or loss of sixth forms.

The problem for Mr Baker, assuming he remains in post long enough to have to implement his reforms, is the intensive pressure he will face from Tory MPs to award grant maintained status to schools in their constituencies.

Mr Gordon Cunningham, education officer of the Association of County Councils, anticipates that many l.e.s. will attempt to speed up reorganization plans in order to push them

through before the new legislation becomes law.

He also believes that the demand for direct funding will come from parents in the shires rather than the cities.

Mr Baker has hinted that the opting-out plan could lead to the creation of Muslim schools, but this was greeted with scepticism this week. Mr Richard Knight, director of education for Bradford, thought it "most unlikely" that many Muslim parents would want to abandon the l.e.a.

He expected that local authorities would be loath to spend heavily on schools that were potential candidates for grant maintained status.

Mr Gerry German, of the Commission for Racial Equality, thought that it would not be in the interest of Muslim parents to opt out. He pointed out that l.e.s., such as Bradford, spent heavily on education with large concentrations of ethnic minority pupils.

The Bill will legislate for a national core curriculum which will limit the scope for controversial subjects such as peace studies. DES sources said that between 60 to 70 per cent of the school timetable would be taken up by core subjects.

Boroughs seek ways out of ILEA

by Ian Nash

The Inner London Education Authority stands to lose control of 100 schools and more than one-fifth of its population if the three Conservative-controlled boroughs go ahead with their declared intention of leaving ILEA since it was set up in 1965.

Surprisingly, the City of London, which could be good news for ILEA since it was set up in 1965, has just one voluntary school and has just one voluntary school.

But Mr Neil Fletcher, leader of ILEA, said this week that the chances of losing Kensington, Chelsea, Wandsworth, and Westminster will be so far-reaching that they are impossible to predict.

The only thing that is clear, he said, is that the proposals are completely impractical and that the public will tolerate them once they find out they will do to the school system the same quality service.

Predictably, Mr Paul Bence, leader of Wandsworth Borough Council, disagrees. "We know that we do it and it would be Wandsworth's own," he said. The borough has been standing policy in favour of opt-outs for four years.

It is the largest of the Conservative-controlled boroughs and has 15 primary schools, 16 secondary schools, and three nursery schools. Mr Bence said that the borough would be able to take over the schools and run them on the same quality service.

Westminster Council chose today to announce its intention to opt out, and again, it is understood, will be able to take over the schools and run them on the same quality service.

Mr Rodney Brook, chief executive officer for Westminster, said: "The council is very anxious to take over the schools and run them on the same quality service."

It is anticipated that Kensington and Chelsea will follow suit. It has primary, five secondary (four of which are church schools), and four nursery schools.

Headteachers, particularly in progressive comprehensive schools in Westminster and Kensington, are reluctant to comment on the opt-outs until they are spelled out by Michael Marland, head of North Westminster Community College, of the concerns of Mr Fletcher.

"There are many advantages to opt-outs," he said. "I'm worried about the break-up of a service that has more than 100 years and means a quality service can be spread effectively across the capital."

"Wasn't the whole of the 1944 Act about the abolition of local education authorities?" he asked.

Mr Fletcher added that it was just a question of common sense. The borough boundaries were not drawn to the school catchment areas. There were also eight further education colleges and more than 15 education centres to consider.

Many were specialist colleges drawn from all schools in the borough. Many schools, too, were special centres in their own right, such as Pimlico school which was a centre for music excellence for young people throughout the ILEA.

There is also the question of reorganization for the new education authorities to control. Opting out would lead to the creation of up to five of the ten ILEA divisions which would have to be reorganized for other boroughs.

The four Conservative-controlled boroughs contributed a total of 60 per cent of the ILEA budget last year. The City of London, £21 million; Wandsworth, £26 million; Kensington, £25 million; and Westminster, £25 million.

James Meikle reports on how teachers have reacted to the result . . . Landslide buries strike campaign

Three years of industrial action in schools, first over pay and then the loss of bargaining rights, seemed at an end this week as teacher unions considered how to live with the newly-elected Government.

The National Union of Teachers and the National Association of Schoolmasters/Union of Women Teachers approached Mrs Thatcher for a meeting on restoration of negotiations - but the NUT's Mr Doug McAvoy has already signalled his own opposition to the continuation of strikes.

The deputy general secretary, who led the union for some of the most troubled periods, said: "Teachers, while they will continue to be dismayed, disappointed, and concerned at the denial of negotiating rights, will see other issues - parental choice, schools opting out of local authorities, the national curriculum and testing - posing even more fundamental dangers to state education."

"I personally feel that, if we are going to deal with these particular issues positively and seek to get as much support as possible for our approach, then it will be necessary to build links with local authorities and parents. These links will be more easily developed if there is no disruption in schools."

Mr McAvoy stressed that he had supported the strike action in the run-up to the general election, but the union could not cause indefinite disruption on the one particular principle when the Government had been returned with a 102 majority.

The union's national officers were meeting yesterday and the joint NUT-

NAS/UWT committee on industrial action will be convened soon, although members are not expecting the Government to shift from its pre-election plans for issuing a consultative Green Paper on negotiating rights.

This means the unions will have to deal with an appointed advisory committee for the 1988 pay award, while arguing for the national joint council (NJC) machinery agreed by four of the six teacher organizations and local authorities.

NAS/UWT officers meet next week to consider possible ways forward - and this could mean using the "protection" of working to contract to cause further difficulties in schools.

The Secondary Heads Association this week reaffirmed its support for the principle of the NJC, and maintained its opposition to separating negotiations for heads and deputies as desired by the National Association of Head Teachers.

The SHA is seeking an early meeting with Mr Kenneth Baker over "opting out", which, it says, is opposed by the vast majority of members.

The Professional Association of Teachers, meanwhile, took a predictably rumbustious line. Mr Peter Dawson, its general secretary, said: "The teachers have been routed. Disruption has been working for peace have won a great victory."

There should be a grand alliance with the Secretary of State "to carry forward the measures which are proposed in a form most likely to meet the needs of children".

The coming months are likely to be difficult for the NUT, with the Socialist

Teachers' Alliance, almost now a union within a union, stepping up the pressure for a more political stance. It will campaign again for the establishment of a political fund and a change in the aims and objectives of the union, at present largely limited to promoting the pay and conditions of members, securing resources for the state education system, and mobilizing collective opinion in "the interests of education and teachers".

But the NUT leadership, although full of Labour sympathizers, is acutely conscious that its grass-roots membership comes from across the political spectrum. It fears continuing battles, either in industrial action against the Government or through internal strife, will only mean more members defecting to other strike- and politics-free unions and thus further lessen the NUT's influence in education and deepen its financial crisis.

Thousands of teachers could be "clocking off" from their jobs in schools next May if local authorities and headteachers stick to the Government contract of a 1,265 hour-year, according to Mr Graham Clayton, NUT solicitor, adds Sarah Baylis.

In a fierce attack on the Teachers' Pay and Conditions Act and the "dictatorship" which it has introduced into teachers' lives, Mr Clayton predicted that many staff would have achieved their total hours and 195 working days long before the school year was over.

He told the union's annual primary education conference at Stoke Rochford, that the Government's "gall" in introducing directed hours meant that teachers would no longer paper over the cracks of the education service.



Goodbye to all that: more one-issue action seems unlikely

It's unhappy hour for red cocktail set

Two television viewers sported scarlet rosettes while Red Devil cocktails (cherry brandy and gin) outside Blue Ladies (vodka and blue curacao) and Yellow Submarines (advocaat and stragg). A subdued group of teachers watched the results teeming in and the Conservatives and their radical (or divisive) education policies returned with a thumping majority.

The election fell half-way through the National Union of Teachers' national education conference at Stoke Rochford, just six miles from Grantham, Mrs Thatcher's home town. But the audience in the union's training centre had dwindled from about 40 to a handful long before her party had gained enough seats to guarantee control of the Commons and implementation of controversial legislation.

Boos and hisses greeted the returned member for Mole Valley - Mr Kenneth Baker - as he made a brief, victorious appearance on the screen. The election result was hardly a surprise, even if previous debate had been tinged with a hope for the impossible, a Tory defeat or a vote for moderation.

Teachers called for a union discussion document on records of achievement as an alternative to blanket testing. They first made reference to the Secretary of State, then a Conservative Secretary of State, since, as one speaker put it, there was no guarantee that Labour would not start testing too.

Such a non-partisan stance was, in the circumstances, touching.

while Richard Garner reviews how educationists fared at the hustings

Increased majority for the pedagogical classes

With the newly-elected Conservative Government planning the biggest shake-up to the education service since the 1944 Act, it's interesting to note that there will be a fair sprinkling of MPs with educational experience on the Opposition benches.

The new 229-strong Parliamentary Labour Party contains 23 teachers and 29 lecturers - compared with nine and seven respectively among the Conservative intake. Overall, there will be 37 teachers and 39 lecturers in the House of Commons.

But there will be no shortage of advice from the Government's own benches. At least nine of its 375 MPs have held office within the Department of Education and Science and one, Mr Nicholas Bennett, MP for Pembroke, is familiar with the other sharp end of the service - as an education officer with the London borough of Haverling.

Ms Ann Taylor, Neil Kinnock's shadow number two during the 1979-1983 Thatcher administration, returns as MP for Dewsbury, West Yorkshire. Other educationists were less lucky. Mrs Shirley Williams (SDP) was defeated in Cambridge; Mr Clement Freud, the former Liberal education spokesman, lost Cambridgeshire North-East; and Michael Hancock and

Mr George Cunningham, both SDP spokesmen for a short time, also faltered.

Mr Hancock lost Portsmouth South, gained in a by-election in 1984, and Mr Cunningham failed by 805 votes to regain the Ilminster South constituency he once held for Labour.

Mrs Anne Sofer (SDP), who formerly chaired the schools sub-committee of the Inner London Education Authority, came third in Hampstead; Mr John Davies, chairman of the Educational Publishers' Council, achieved a 1 per cent swing to Labour in Mrs Thatcher's constituency of Finchley, but lost by 8,913 votes; and Mr Hilary Benn, the chairman of Ealing's education committee, witnessed a 6 per cent swing to his Conservative rival, Mr Harry Greenway, a former deputy head.

The new intake of MPs includes Mr John Bowles, who chaired Kingston upon Thames's education committee. He defeated Labour's Alf Dubs in Battersea, south London.

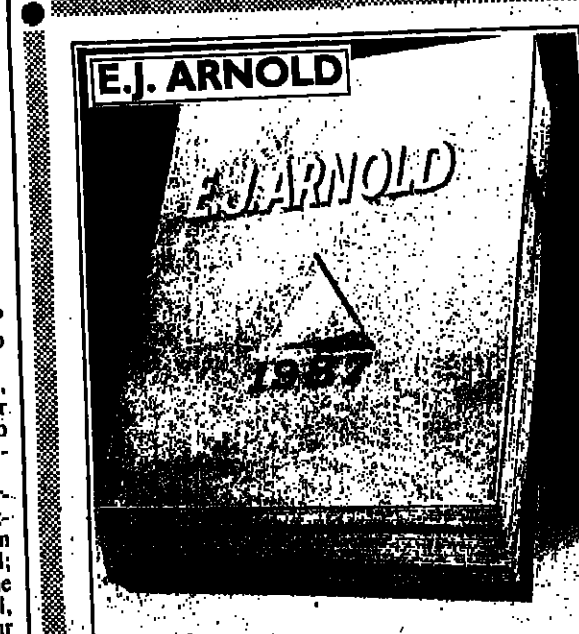
All three education spokesmen - Mr Kenneth Baker (Conservative), Mr Giles Radice (Labour) and Mr Paddy Ashdown (Alliance) - returned with substantial majorities.

Indeed, it looks as if Mr Ashdown may be another MP hoping to launch himself from education to greater things - he has been tipped as a future leader of a newly-merged SDP and Liberal Party.

If he were to succeed, it could lead to an intriguing election battle in 1991 or 1992. Assuming Mrs Thatcher goes "on and on" - as she said in one pre-election interview - and Mr Kinnock survives, it would mean the three largest parties would be led by people who had previously held their party's education brief.

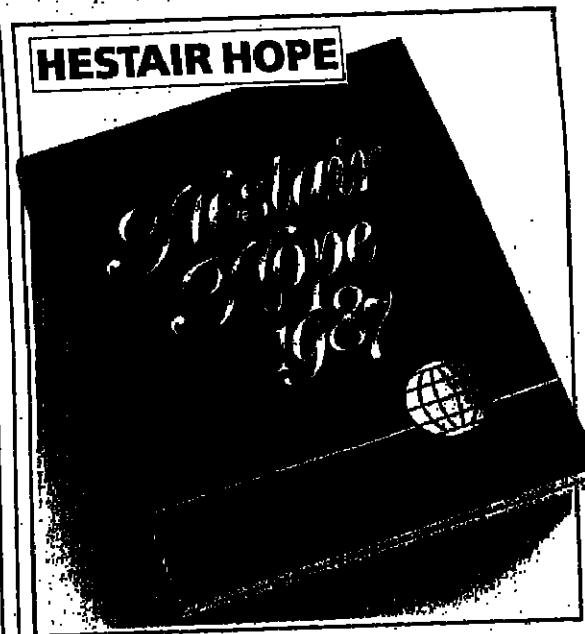
But that's in the future. In the meantime, with a Conservative majority of 102, those Labour MPs who swapped chalk for talk may find themselves suffering from just as much low morale as their colleagues who swapped desks for desks.

On a national reform of education, the Conservative Government will have to avoid swinging between



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New crew prepares to pilot Baker's Bill

Mr Kenneth Baker, as expected, remained in office charged with steering through the House of Commons the major Education Bill since 1944.

He was accompanied by Mr Angela Rumbold, his deputy, who took over the role of the Education Secretary when Mr Baker was elected to the House of Commons last year.

Education Act through the Lords and clearly impressed the deputy Prime Minister, Lord Whitelaw, with her skill. She will have the tricky task of seeing Mr Baker's manifesto Bill through the Upper House. As peers go, the Baroness Hooper is, at 49, relatively young.

Mr Bob Dunn, to the surprise of almost everyone, remains minister for responsibility for schools. It is said that his ability is in doubt, rather than his will. He held the job for four years and was

expected to be given experience in another department. He told journalists shortly before the general election that he did not anticipate staying at the DES.

Mr Dunn is the standard-bearer of the right at the DES and is known to have good connections with radical Tory back-benchers and party activists. As a passionate advocate of measures to cut the expenditure on education, he is expected to remain in office to see policies

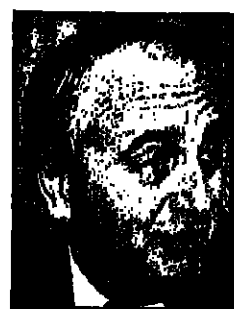
that he has enthusiastically backed through the statute-books.

Mr Robert Jackson, aged 41, the new higher education minister, has impeccable credentials for the job. He is a fellow of All Souls and a profile author. He replaces Mr George Walsby, whose resignation came as a surprise. He wrote to the Prime Minister telling her that he no longer wished to hold office. Mr Jackson is expected to remain in office to see policies



DES "captain" Kenneth Baker poses for the start-of-season ministerial team photograph with Bob Dunn (far left), Angela Rumbold (left) and his two new "signings", Baroness Hooper and Robert Jackson.

SCHOOL TO WORK



As Industry Secretary, Lord Young is off to command the promised crusade against urban deprivation. Mark Jackson looks at his legacy to training and education

A property man who remodelled the landscape

Five years ago a rich, but virtually unknown, property man was given control of Britain's training and unemployment schemes.

This week, famous and honoured, he moved to new pastures, leaving a trail of rancour and disputed achievement.

A succession of authoritative studies show that mainstream industrial training has suffered rather than expanded during David Young's reign, first as chairman of the Manpower Services Commission, and then as Secretary of State for Employment. And although he launched and backed the later extension of the Youth Training Scheme, its planning was already under way when he first arrived at the MSC.

It is in education that David Young, now Baron Young of Graffham, has changed the landscape irreversibly. Neither the curriculum nor the power structure will ever be the same again.

And, more significantly, he has demonstrated a model for securing real changes quickly which is being emulated now by colleagues such as the Education Secretary.

When David Young was first appointed to the MSC chair, an amateur displacing a distinguished professional manpower expert, he explained that it was "to bring a touch of the real world" into the Commission's activities. What he brought in from the

big money, wheeler-dealer world was a whole repertoire of techniques for outwitting entrenched opposition - brute force and threats, surprise swoops, and a readiness to shoot first and leave the problems to be sorted out by the victims.

Nine months later the education service got its first taste of the way things are done in Lord Young's world. The local authorities, out of the blue, were invited to compete for a big bonus offer from the Government - generous funds to pilot a new curriculum of technical and vocational education in some secondary schools.

The authorities, including Tory councils who were keen to see such innovation, were outraged by the brasserie and impropriety of the offer. Not only had the whole thing been sprung on them without the years of consultation and planning which had always preceded major curricular change, but it was plain that the MSC meant to have a major say in how the money was spent. The historic separation of education powers between central and local government was under threat.

If the Government was prepared to admit its gaffe and embark on the usual consultations leading to an adequate development timetable, then eventual agreement on some kind of programme was possible. Without that process, which would confirm that the educa-



TVET: David Young's model for change

tion service was still master in its own domain, the new courses would not get into the schools, vowed the authorities.

They thought they were in a strong bargaining position, but they had never lived through a hostile takeover bid or snatched a lucrative development site out of the jaws of a competitor. David Young had ready the seller's classic riposte - if they did not buy he would take his wares elsewhere.

It was over lunch with a TES reporter that he disclosed he was ready to set up 14-18 vocational schools, run directly by the MSC. If the authorities remained intransigent.

The threat helped tip the balance with many local authorities who in any case found the offer of extra cash irresistible. More than enough rushed forward to bid for the first tranche of Technical and Vocational Education Initiative projects, and long before the end of the four-year pilot programme all but a handful were participating. When, last year, the Government announced that the scheme was to be extended to all pupils everywhere, it was embarking on a policy which the opposition parties and most educationists had by then been demanding for some time. At that lunch, David Young denied that he would actually prefer to set up his own establishments operating on the lines of the vocational schools run internationally by ORT,

the training charity of which he is a leading supporter. But intentions he has disclaimed have often come to be implemented subsequently, and Kenneth Baker's city technology colleges are to be much like the MSC schools that he had in mind in 1982.

In their brief stand against the TVET and the MSC's involvement in secondary education, the local authorities had found themselves unexpectedly isolated: Mr Young had already in private got the TUC's backing - readily offered by its then general secretary, who agreed that education badly needed a short, sharp shock.

The threat helped tip the balance with many local authorities who in any case found the offer of extra cash irresistible. More than enough rushed forward to bid for the first tranche of Technical and Vocational Education Initiative projects, and long before the end of the four-year pilot programme all but a handful were participating.

When, last year, the Government announced that the scheme was to be extended to all pupils everywhere, it was embarking on a policy which the opposition parties and most educationists had by then been demanding for some time. At that lunch, David Young denied that he would actually prefer to set up his own establishments operating on the lines of the vocational schools run internationally by ORT,

the training charity of which he is a leading supporter. But intentions he has disclaimed have often come to be implemented subsequently, and Kenneth Baker's city technology colleges are to be much like the MSC schools that he had in mind in 1982.

Honours list

Knighthood for Commission chief

Mr Bryan Nicholson, chairman of the Manpower Services Commission, has been knighted in the Queen's Birthday Honours. There are also knightships for six others from the academic world.

Mr Eric Bolton, senior chief inspector of schools at the Department of Education and Science, becomes a Companion of the Bath. Mr Duncan Graham, the former county education officer for Suffolk, receives a CBE.

There are honours, too, for 17 headteachers, several classroom teachers and others from the education world. Dr Rhodri Boyson, a former under-secretary of state for education, becomes a Privy Counsellor, and has also received a knighthood.

Life Peer
Chancellor, Sir Henry Amos, chairman, Milton Keynes Development Corporation vice-chancellor, Cheltenham Institute of Technology.

Privy Counsellor
Baroness, Dr Nicola, former under-secretary of state for education.

Knight Bachelor
Bottery, Colin Terence, professor of clinical pharmacology, Royal Postgraduate Medical School, London; Sir John, Professor Roger, former director of the Royal Society; Sir John, former director of the Royal Society; Sir John, former director of the Royal Society.

professor of forensic medicine, University of Leeds; Graham, Duncan Gilman, lately county education officer, Suffolk; McCallum, Robert Ian, lately professor and head of department of occupational health and safety, University of Newcastle; Ritchie, William, lately professor of mathematics, Imperial College of Science and Technology, University of London; Walker, John Hyslop, director, Scottish Examination Board; Wilson, Peter Northcote, professor of agriculture and rural economy, head of school of agriculture, University of Edinburgh.

Officer
Anderson, Kathleen, deputy principal, Napier College of Commerce and Technology, Edinburgh; Ashton, Arthur Samuel, head, Elaine Avenue primary school, Strood, Kent; Bage, William Derrick, professor of building technology and head of department of construction management, University of Reading; Bell, Bernice Ann, chairman of governing body, Rother Valley College of Further Education, Rotherham; Berridge, John, head, Addingham first school, Addingham, Lincolnshire; Berridge, John, head, Addingham first school, Addingham, Lincolnshire; Berridge, John, head, Addingham first school, Addingham, Lincolnshire.

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box. Soon to the press and to a host of viewers, he was the crucial figure in a down-to-earth education, as well as on the economy. His underlying message was that education should be usually on less public occasions he flayed parents for not doing their children or worse, to give a service education as a disservice.

At his press briefings, however, he would explain that it was implemented by the MSC at the request of the Government, and was only acting as its agent. He knew this was a slender reed, but he was the prime architect of the policy every case.

As often as not he was mentioned until pressed that he had been bitterly opposed by the commissioners and with the greatest reluctance majority.

However they resembled little the commissioners who they wanted to keep their post. Young not only controlled the mission's expanding remit, but the massive increases in their budgets, the result of the influence on Mrs Thatcher.

The growing admiration for him, emboldened from the MSC Cabinet post in the mid-1980s, when no slight of his was to play an Elizabethan version of a game called "jingle", where a blindfolded child has to catch others wearing bells round their wrists. The pupils have also learnt songs and dances from the same period. The project will culminate in an Elizabethan fair held at the school.

Inside the museum, history was being alive for pupils from Lingford Primary. Nicola had spent an enjoyable morning comparing a modern doll with the antique dolls on display. She was now trying to identify some loose fillets and pottery by looking round other exhibits.

In the shadow of a magnificent Roman mosaic, other pupils were constructing their own mosaic. Another group was writing a museum guide after interviewing staff and visitors.

Christine Jones, the county adviser for humanities, explained: "We want more participation. We are trying to get children coming round the museum simply as a trip out."

With help from John Bainbridge, the museum's education officer, the authority is encouraging schools to use the museum collections more actively in history teaching. "We like children to handle objects instead of peering at them through the glass," Mr Bainbridge said.

On the green nearby, children from Parkfield primary school were entertaining passers-by with a dance display. Some boys with huge padded shoulders did an energetic, consciously macho dance built around American football. An elaborate parody of a silent film, to ragtime music, followed.

Somerset is keen to encourage creative work in physical education, according to George Howard, the county's PE adviser. Activities like abseiling and caving at the county's four outdoor education centres have been found to encourage creative writing.

"We plunged down an almost vertical rock face - all we saw was brambles and more brambles, then we saw a black hole, it looked like the mouth to hell," wrote one excited 10-year-old after a caving trip.

Another writing project is using puppets to teach children about conservation and environment. At the festival, pupils from Archbishop Cranmer school performed puppet plays they had written for hand puppet animals.

Setting the scene is very important. "A day in a larch tree high up in the Quantocks. Two squirrels are nibbling cones," announced an 11-year-old girl before the curtain rose.

The plays are all based on scientific fact and introduce terms such as hibernation, carnivorous and nocturnal. The project was devised by Val Long during a 10-week fellowship at Bristol University. "The children love puppets so much that it seemed a good way to teach them more about animals," she said.

Next to the puppet shows, children from Bishop Henderson school were busy with pocket calculators and measuring tapes. They had to tile a paved area with four different sizes of tile at four different prices. Practical investigations have been an important part of Somerset primary maths since the Cockcroft report emphasized the need for a problem-solving approach.

One of the most striking demonstration lessons featured five-year-olds making their own model of test wind power. They were using Somertech, a pack of child-sized tools and equipment developed by Somerset advisers and technicians.

"This system enables five-year-olds to cut wood accurately and safely," claimed Pat Hicks, the county's primary science co-ordinator. Wood is firmly held in a channel while it is cut and pin holes measure off exact centimetre lengths. A saw guard is used to control cutting. Left-handed children are catered for too.

Using a common chassis, pupils are able to isolate variables when they are testing different scientific principles. The display models built by older children were a Heath Robinson dream of complicated pulleys and flashing lights. They included a prim-

Susannah Kirkman reports from Somerset's festival of primary education, which began last week

A service with every reason to smile...



"Jingle" bells: children from Lydeard St Lawrence enjoy an Elizabethan version of blind man's buff

any festival pier complete with moving carriages and Plasticine figures. More than 2,500 children and nearly 240 schools are involved in the festival, which finishes at the end of June. But Gwen Cavill, the county adviser who is organizing it, is convinced that all the effort is worth while.

"Public relations are important; education authorities don't do enough of it. This is a marvellous opportunity to tell people that primary education is terrific in Somerset," she said.

● Oxfordshire primary schools have also been holding a primary festival this past fortnight. All the schools in the county opened their doors to the public, arranging displays of art, dance, drama, work with computers and music.

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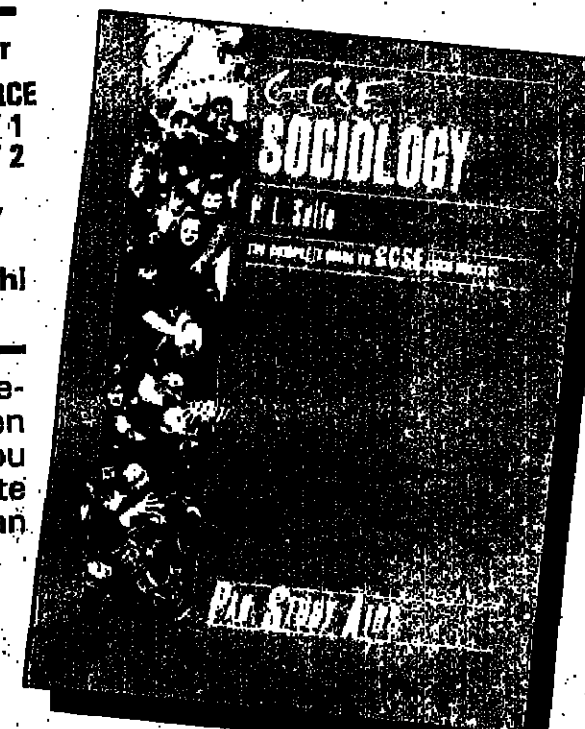
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Make nursery provision compulsory, heads say

by James Melkie

Local authorities should be compelled to provide nursery education, the National Association of Head Teachers says in a policy statement on the five-year-olds.

The association is calling on the Government to reintroduce statutory obligations, which were removed in 1980, at the first step towards providing equal opportunities.

The new document, based on Government statistics, says percentages of children in nursery schools and classes vary among county councils, from 48 per cent in Cleveland to none in Dorsetshire; among metropolitan authorities, from 56 per cent in Wolverhampton to 12 per cent in Bradford; and in Greater London, from 66 per cent in Hounslow to 2 per cent in Bromley.

"It is surely unacceptable that the educational future of many thousands of children regardless of their needs is dependent on the area in which they live," the NHT says.

The NHT says every L.A. should be required to produce a policy statement on the provision of nursery education to the British community in London.

adequately funded action programme for all children aged three to five, which co-ordinates the work of the maintained and voluntary sectors.

In the meantime, children unable to benefit from nursery education should have a right to a minimum of half-time, fully resourced education, throughout the school year in which they reach their fifth birthday.

The NHT calls for staffing levels of one teacher and one nursery nurse to every 26 children, or to every 20 if they have special needs. More teachers must receive appropriate specialist training and money must be spent on suitable buildings and equipment.

The NHT says every L.A. should be required to produce a policy statement on the provision of nursery education to the British community in London.

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NEWS

SELECT COMMITTEE

Lack of money isolates pupils in special need

by Sue Surkes

A lack of resources has severely hampered the successful integration of children with special needs into mainstream schooling, says an all-party House of Commons committee report on special education.

In its report, the Commons Select Committee on Education says there is "little doubt" that lack of cash has thwarted the aims of the 1981 Act - and calls for extra money to be spent on special education. (It does not spell out where extra resources ought to come from, however.)

It notes the Government's original hope that closing special schools would generate extra cash, but stresses the impossibility of pinpointing where all the proceeds have gone from the closure of 147 special schools since January 1982.

The Committee's report, written hastily after the general election had

been called, will be welcomed on some aspects but rejected as too weak-willed on others.

It is highly critical of the Department of Education and Science's "paucity of information", noting that the Department's involvement in monitoring implementation of the Act, disseminating good practice and issuing guidance has been "very limited".

It says the DES had no systematic knowledge about the nature and extent of provision for the wider range of special needs. It had little information about the workings of the Act as it related to the under-fives and offered no details either about the numbers of under-fives who might be receiving special education or of the numbers of pre-school children with statements.

The Committee appeals to the DES to monitor the implications for special needs children of the Education Secretary's plans for a national curriculum and benchmark testing.

"The proposal for defining levels of achievement, including testing attainment levels, may present problems about the interpretation of individual results. A major question arises about the prospective relationship between inability to reach the standards set and the identification of special educational needs as defined by the Act."

On the frequently discussed issue of a national advisory body for special education, however, the Committee is more optimistic. It supports the establishment of a "multi-disciplinary national development group" to contribute to good professional practice, but stresses that such a body would have to focus on "particular aspects of professional practice, selected as priorities in consultation with the Government and other interested parties".

It also says it accepts the reasons for the suspension in 1974 of the Advisory Committee on Handicapped Children and for the rejection by the Secretary of State in 1985 of the working party proposal for a National Advisory Committee for Special Educational

Three investigations started by the last Parliament's Select Committee on Education, Science and the Arts remained unfinished when the general election was called. Here and opposite *TES* staff analyse their reports - which were published this week



The DES is accused of providing schools with "very limited" information on good practice

Needs. But it is on issues such as speech and other therapies, and in-service training that the committee's views are likely to cause most disappointment.

The report concedes that "having arrived at an agreed statement of needs it is not possible for the i.e.s. to ensure the delivery of many of the means of meeting those needs". (Speech and other therapists are employed by health authorities.) And it

was causing confusion, with the terms "special needs" and "special educational needs", for example, being used in different ways.

It heard that the Act's focus on statementing had led some to suggest that its definitions did not include the wider range of special needs described in the Warnock Report of 1978.

"The evidence suggests that in some i.e.s., a preoccupation with the provision for particular children as a result, may have led to less than adequate attention being given to the wider forms of special educational provision."

Committee members say they are in no doubt that aspects of the statementing and assessment procedure are not working satisfactorily. They say they were told that procedures took too long, that parents found the language and procedural complexities difficult to understand, that statements were vague and that many statements were tailored to fit existing provision.

The report notes the lack of central guidance on what constitutes integration and says this might have helped fuel fears that i.e.s. would embark on programmes of widespread special school closure.

It says it is important for i.e.s. to have clear statements of policy on integration. But it also stresses the "important place held by special schools under the Act as part of an

i.e.s.'s provision for special educational needs, linked with their primary and secondary schools."

The Committee comes out in favour of greater use of "advisors" to help parents in their dealings with schools and i.e.s. Some still feel their contribution to assessment procedure is limited, the committee notes. The main problems brought to them included unclear information on i.e.s.'s assessment procedures, insufficient provision, insufficient parental contribution to assessment process and curriculum of their views.

The report further notes that section 11 of the Act, which deals with the duty of health authorities to parents and others, is apparently working to the satisfaction of voluntary bodies. It cites examples which pointed to health authorities systematically informing educational authorities about young children who could have special needs and who are not always being informed by voluntary organizations which help them.

At the other end of the spectrum, the Committee is recommending expanding the scope of the Act so that it applies to further education colleges as well as to schools.

SPECIAL NEEDS

says problems arising from this state of affairs were a major concern in the evidence submitted.

But in pointing out it was unable to examine the Department of Health and Social Security on these and other matters - the general election got in the way - it concludes only that there are issues which require "careful joint consideration" by the education, health and social services authorities.

On teacher training, it is similarly reserved. "The Committee has not been in a position to explore this aspect of special education in any detail and as a consequence can only reflect the concern shown in the evidence presented to it."

The Committee was told that the relatively of the 1981 Act's definitions

Prisoners' rights still neglected

by Ian Nash

Higher spending on prison education is needed and every prisoner should have the right of access to an appropriate course, the Commons Select Committee concludes in its report on prison education this week.

The committee also condemned the Government for rejecting its earlier call for a Prison Regimes Act to include voluntary access to education, on

PRISONS

grounds of cost and because it would have given prisoners a right to attend law-abiding citizens.

The Committee appreciated the financial argument but found it "difficult to comprehend the Government's refusal on grounds of principle" of access to education to improve the status of education in prisons.

The Government's objections were rejected as "unconvincing" and it was pointed out that the present level of

education in the rehabilitation of offenders.

The report also pointed to wastage of resources by the prisons themselves. According to HMV, many classes were cancelled or disrupted by late arrivals.

The Committee called for better management to solve resource problems. "We find it difficult to understand why, even at the present level of expenditure and given officers' man-

power, there should be the high level of wastage of educational resources which exists in some prisons."

The earlier report's demand for legislation for a wide range of prisoners' rights is reiterated. "The changes given in the present legislation do nothing to alter the current situation," it expressed that the prisoners' rights recommendations were founded.

equipped to support the education service;

Provision should be increased so that three years to ensure that by 1997 per cent of prison spending goes on education; and

Local education authorities have a duty to advise officers on the adequacy and efficiency of educational provision.

A central register should be kept of teaching hours lost through operational and other difficulties;

Training of officers should be reviewed to ensure that they are

equipped to support the education service;

Provision should be increased so that three years to ensure that by 1997 per cent of prison spending goes on education; and

Local education authorities have a duty to advise officers on the adequacy and efficiency of educational provision.

Further fraying of school fabric predicted

by Barry Hugill

Government spending plans will lead to further deterioration in the state of school buildings, the Commons Select Committee on Education concludes in its report on expenditure.

The MPs' most important recommendation is that the level of investment by local authorities in capital works - schools and colleges - and in buildings should be maintained at real levels achieved in 1986/87.

The Government's plans would lead

The Government is often criticized for making unrealistic estimates about the amount local authorities will need to spend to maintain the education service. The Committee subscribes to this view, and observes that in recent years central government has made totally unrealistic projections of future i.e.s. spending.

The latest budgetary plans relate to 1987/88 and the following two financial years. They project an increase in spending of some £2 billion-£3 billion above the January 1986 plans and as such, says the Committee, represent a

SPENDING

cut of about one-quarter in capital expenditure during 1987/88 as compared with 1986/87, says the Committee. It is anticipated that gross capital spending will fall from £540 million to £400 million next year.

By MPs were in a clear majority for the Committee, but nevertheless Government comes in for some criticism. In particular, the student grant is said to be much too low and the Committee insists it must be increased.

It does not, however, put a figure on the amount that should be granted, nor does it comment on proposals, under review in Whitehall, to introduce student loans.

THE KEY RECOMMENDATIONS

- More spending on maintenance and repair of schools and colleges;
- Independent research into the effects of central government initiatives and specific grant projects;
- A rise in the value of student awards;
- More detail to be published about the planning, administration and accountability of city technology colleges.

MPs' reports point the way forward

The Education, Science and Arts Committee, appointed to examine the expenditure, administration and policy of the DES and other public bodies, has concentrated on three areas this year - special education needs, prison education, and expenditure.

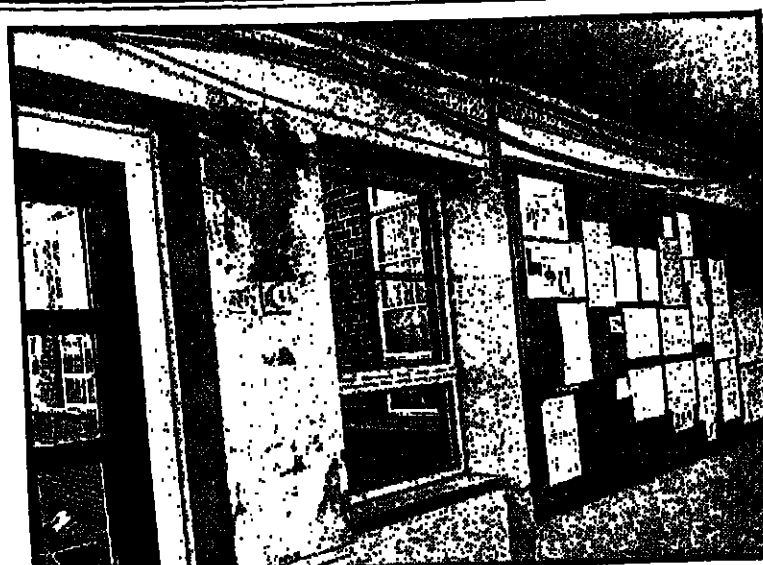
Constantly aware of the possibility that a general election would cut their activities short, the members have spent the past few months packing in visits and evidence-taking sessions. In the event, a Downing Street deadline imposed before they had finished taking all the evidence they wanted, they were able to agree on draft reports before the dissolution of Parliament.

The heaviest report of the three - on special needs - will be in two volumes. The second volume, containing written evidence, will be published at a later date, possibly in July.

The committee, chaired by Sir William van Straubenzee, comprised the following MPs: Mr Jim Callaghan; Mr Martin Plummer; Mr David Enoch; Mr Harry Greenway; Dr Mark Hughes; Mr Michael McNair-Wilson; Mr Jack Thompson; Mr Roger Smith; Gerard Vaughan; and Mr Malcolm Morrison.

Mr William and Dr Hughes retired at the general election. The other committee members were all returned to Parliament.

NEWS



Capital expenditure is to be cut by 25 per cent during the current financial year

more realistic view of achievable levels of education expenditure.

Nevertheless, the MPs suspect that the i.e.s.'s real spending will exceed that projected by the Government. The Committee says the Government should either make it clear it will not tolerate "overshoot" by local authorities and intends that spending should be within the limits set out in the White

Paper on expenditure, or accept that overspending is necessary and legitimate.

An example of the mismatch between Government projections and i.e.s.-estimated actual expenditure are contained in two sets of figures. The Government planned expenditure of £308 million in 1986/87, compared with a local authority figure of £471 million.

SELECT COMMITTEE

Plans for 1987/88 have been set at £364 million - which is £57 million above the January 1986 proposals. It is, however, a projected figure well below real spending in 1986/87.

Despite the criticisms, the Committee accepts that "there appears to have been" a real increase in current expenditure on education, other than on teachers' pay, over the past two financial years. The increase is largely explained by local government overspending. Actual spending by central government has risen very little, says the Committee.

The MPs estimate that teachers' pay will consume almost 80 per cent of any spending increase in the coming financial year.

The report was completed before the dissolution of the last Parliament and its content was known to the Labour MPs on the Committee. They abided by Parliamentary convention and chose not to "leak" it despite the ammunition that it would have provided for the party during the election campaign.

THE KEY RECOMMENDATIONS

The DES should:

- Examine why there is such a varied provision for statemented children;
- Ramify its lack of information about wider special needs provision;
- Issue a circular on staffing;
- Investigate ways of improving assessment and statementing procedures and disseminate examples of best administrative practice; and
- Collaborate with the Department of Health and Social Security and local education authorities to study the Act's up-to-date as they relate to pre-school children.

The report also calls for more resources and for national guidance on what constitutes special educational provision and on how the wider range of special needs should be identified. It recommends that i.e.s. encourage and fund voluntary organizations to set up, or fund, services for parents.

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Bullying bolsters unhappiness of returning home

The need to conform in Japan is taking a heavy toll on the growing numbers of youngsters returning home with their parents from foreign postings and having to reintegrate into the education system.

Returnees are frequently victims of bullying by their classmates, who criticize not only their different behaviour and lack of language ability, but even their different looks. Having been encouraged to express themselves while overseas, they find their individuality and independence a blight in Japan, and must force themselves back into the mould if they are to be accepted by their superiors and peers.

Two proverbs illustrate the point: "Treat a stranger like a thief" and "The nail that sticks out gets hammered down." Children whom a Westerner would consider bright and full of initiative become, in Japan, too assertive and talkative, unco-operative and arrogant. Of course, children in any culture can be unkind to newcomers, but the phenomenon seems more widespread and harsh in Japan than elsewhere.

This is a dilemma for a country that says it wants to open up internationally, but clings to a deeply-rooted tradition of homogeneity. About 10,000 children returned from abroad last year, compared with some 20,600 in 1982/83, the first period covered by a government report on the issue. Efforts are being made to help, although more emphasis is placed on exporting the Japanese education system than on reintegrating children with changed values.

JAPAN

Barbara Casassus reports how children back from abroad are singled out for rough treatment

There are now 80 full-time government-subsidized schools abroad, which provide compulsory education from the age of six to 15 and are mostly in developing countries, and 95 programmes of supplementary weekend classes, mainly for Japanese and maths.

In Japan, a few local education boards give special treatment to returnees in upper secondary school entrance exams, and some allow children with a language problem to attend a lower class temporarily. Regulations in Japan prevent a slow learner from staying down a year and a gifted child from missing a year. Some universities also waive the preliminary standard entrance exam or hold special tests for returnees.

The Government will open a new international secondary school at the beginning of the 1988 academic year on April 1, with 10 places in each class of 40 reserved for returnees or foreigners. Extra subjects will include world cultures, foreign literature, and German and French as second languages. Pupils will also be able to sit for the International Baccalaureate.

The Education Ministry has increased its budget in recent years to

OVERSEAS



Out of the circle: a Western education can leave pupils alienated

designate more areas and schools to accept returnee pupils. The Mita High school in Tokyo's Minato ward has educated returnees from more than 40 countries since it started its programme in 1977. Many have been admitted to leading universities, such as Tokyo, Waseda and Keio.

The secondary school attached to the private International Christian University has a quota of one Japanese-educated pupil to two returnees, and gives special language training if required before pupils join the mainstream classes. The famous cram schools (*juku*) also play a role. Some have set up overseas branches, and offer tailored courses in Japan for returnees preparing for secondary school or university entrance exams.

The returnees themselves often have a clear understanding of the problem. They say it comes as a shock

to discover not only that they do not belong, but that they ought to belong. They are surprised by the omnipresence of the "group" and the Japanese obligation to appear modest.

In one case in the United States, a high school teacher suggested to a Japanese pupil that she should move up to a more senior class for maths. In a typically Japanese reaction, the pupil said she was not confident of her ability, and was then taken back to be left where she was. Tired of waiting, she eventually reminded the teacher who, in a typically Western reaction, said she was glad the pupil had found her self-confidence.

Professor Herbert Passin, of Columbia University, has observed that "children's return to Japan, which should be a joyous experience, is all too often a bitter one. And quite apart from their personal tragedies, their

special experience and status are potentially so valuable to the country - are neither appreciated nor used.

"It is hard to imagine a greater loss of resources... There are enough of them, and all too often based on the premise that they are 'problem children', too different from regular schools to handle."

On the brighter side, studies have also just been held in Belgium. "Co-operation and partnership" was the somewhat metaphorical theme chosen for discussion by the Ministers, officials and representatives at Mons 11 of the 30 projects. But, against all the odds, some useful guidelines were developed on how to make lasting partnerships out of school-to-work links, which contrast with some disappointing reports on the after-effects of industry visits in this country.

The earliest pilot projects, designed to help Europe's least employable youngsters make the transition from school to work, were born some 10 years ago. One of the first was the Irish project at Shannon which developed curriculum materials, mini-companies and ways of managing relationships

Patricia Rowan looks at the 'district approach' to school-industry partnership

Networks in place of repairs

EEC

between schools and the outside world which still influence all the others.

The second programme was agreed in 1982 out of experience gained in the first, and knowledge that more than six million 15 to 25-year-olds are unemployed within the European Community. In the five years since then the EC has put 40 million ECUs (£28 million) (matched by a similar amount from national governments) into a programme emphasizing the "district approach" - establishing community networks with schools as the linchpin, but including employers, trade unions, parents and local government in a working partnership aimed at changing perceptions as well as job prospects.

As well as partnership, projects were expected to develop work experience schemes; equal opportunities; improved guidance, counselling and information services; staff training; alternative curricula; action on social problems; enterprise schemes; integration of young migrants, and new forms of assessment and certification.

If that sounds a familiar agenda to British ears, it should come as no surprise that the two UK projects in Manchester and Northamptonshire were chosen by the Department of

Education and Science from those involved in its own low attainers' project, or that their curriculum developments were streets ahead of most of the others exhibiting at Mons.

But worthwhile lessons are being shared through the project network on how to develop partnerships between schools and local firms and community which not only work, but last.

"You wouldn't need so many 'repair' programmes if some of the temporary measures were integrated into the mainstream of education and training," pointed out Gerhard Welbers, director of IFAPLAN, the independent research organization which has guided and influenced the transition programmes.

He warned that young people can be bewildered by the fragmentation of training, social and guidance organizations - each protecting their respective fields of competence - and that many were in danger of entering on "training programme careers", moving from one temporary, vocational preparation programme to another without ever entering the labour market.

Schools couldn't just sit back and wait for things to get better. There had to be substantial changes in the way they worked and a good number of models, approaches and structures had been worked out and tested in the pilot

projects which should be adaptable and transferable. Partnerships might not be strong enough to survive, if links were supported merely by helpfulness on the part of the external partner, with one partner constantly in the role of "giver", and the other of "receiver". There needed to be benefits for both partners in cooperation and the tasks of each had to be clearly defined.

Further discussion among participants confirmed that employers do not want to be involved indefinitely in committee meetings and informal discussions about co-operation. What industry preferred was task-orientated groups and action on specific programmes. And difficulties were just as likely to arise on the school side; it was important to sensitize headteachers and the total staff, not just individual teachers.

Does it work? The evidence seems to be that employment prospects have improved in Northampton (where the project is still expanding) as they have in Shannon, Kassel, Modena, Biella, Zealand, Hvidovre, West Flanders and Saint Ghislain. "It has changed the students," said a previously sceptical West German official, "and it has changed the teachers. But will we have the money to carry on when the programme is finished?"



Many young people are in danger of entering on "training programme careers"

Anti-racism manual shows bias

UNITED STATES

since whites dominate and control the institutions that create and enforce American cultural norms and values.

There was worse to come. "Even if an individual white American is free from all racial prejudices, he/she remains a racist," said the manual, "for he/she receives benefits distributed by a white racist society through its institutions. They do not have to consciously decide to oppress racial minorities in order to be racist."

"In order to change a racist society," it went on, "all persons, particularly white persons in the US, must actively choose in some instance to question and go against authority, rules and

values, in order to behave in an anti-racist way and fight a racist system."

All this was too much for Mr Hinkind. "People have a right to say what they want," he declared, "but the question is, what is he doing in a teacher-training manual?"

The Schools Department defended the manual bravely, claiming that the statements were meant "to provoke discussion and examination of institutionalized racism."

"However," added a spokeswoman, "these statements may arouse strong, hostile reactions that tend to polarize rather than to promote an open and non-threatening atmosphere in which to examine these same concepts."

The manual has been withdrawn.

Relief and suspicion over sale

Washington's educational white elephant is actually a dirty shade of grey - a concrete nightmare that sits in the centre of the capital, gobbling money and educating no one. For 13 years, the Pre-Vocational School for the Handicapped has been unused and rotting away.

But even white elephants can be sold. To the immense relief of the DC district school board, this one has just been bought by the city council, which is finding an extra \$8.1 million (£5.1 million) in construction money in exchange for the building.

Exactly what the council intends to do with the school is a moot point. It was originally conceived as a state-of-the-art day camp for the school, and

handicapped, but before it could be completed there was a change in national policy. Handicapped children, Congress decided, should be educated with normal students.

That left officials who would never have dreamed of the school's use for its designed purpose - which would have been bad enough.

But it transpired that the school had other drawbacks: a badly designed roof that leaked like a sieve; sagging concrete hallways; too narrow for wheelchairs; and walls built of wrong materials. For years, at around \$10,000 a month has been spent to stop the building falling down.

It has been estimated that it would cost \$2 million to repair the school, and

\$2 million just to demolish it. In these circumstances, Mayor Marion Barry's offer to buy the monster has seemed too good to be true.

There are rumours, apparently well-founded, that he intends to sell the building for a profit.

Others whisper darkly that he intends to renege on the promise to compensate the school system with the \$1.1 million to provide alternative facilities for severely handicapped children. "It's not true," said one of his aides. "When the mayor has signed an agreement with the school board, he's kept his word. They know that."

abritr-ajonart BillieBelle

Jamaicans uncommonly entranced by cheating

Hundreds of children and some of their teachers in the Jamaican capital, Kingston, have come under a cloud with revelations of cheating in the 1987 Common Entrance examinations, which serves to select pupils for the island's grammar schools.

Some 47,000 11 and 12-year-olds sat the examination in January in an effort to win one of 10,000 places. Results were due this month.

But a statement from the Ministry of Education said there had been cheating and children from about 12 schools would have to take new papers. It is alleged that papers were available to some pupils before the exam date.

The Ministry also indicated that children at some schools not implicated would be asked to re-take the exam - a decision which sparked protests from parents and teachers, and led to calls for the Education Minister to think again.

Mr Neville Gatlifore, who assumed his portfolio late last year, said investigations began when several schools that had poor Common Entrance pass rates previously showed a dramatic improvement.

Some suspicion has fallen on the Government printing office, which produces the papers.

Mr Gatlifore said: "The printing of further examination papers will not be done at the Government office. Any school found cheating will be disqualified for that year and possibly for three years."

The Jamaica Teachers' Association said that if any of its members were proven to be involved in the irregularities, it would take action against them.

Ministry puts girls' appeal into science

NETHERLANDS

Dutch girls have been the target of a Ministry of Education campaign that urges them not to drop pure sciences and mathematics from their exam list at school.

For the first time, the Government put out television advertisements and produced brightly written pamphlets to reach 15-year-old girls who all too often abandon pure sciences at the first opportunity, and so reduce their chances for higher education and jobs.

The campaign has featured such copy as: "If you are a girl and crazy about airplanes, there really are other professions than being a stewardess. Such as designing airplanes yourself! Exciting, precision work!"

The Netherlands, while boasting a highly modern economy and a strong reputation for scientific research and development, has a lower percentage of girls studying sciences and women pursuing technical careers than any comparable Western nation.

The Government pamphlets explain: "Choosing a pure science often requires a bit of nerve. Boys select these subjects quicker than girls. And it is not nearly as common here as it is abroad for girls to do 'something technical'."

The campaign reached its climax earlier in the year when Dutch 15-year-olds traditionally choose the range of exam subjects they will face two or three years later.

Although final figures are not yet available, the Ministry believes its £225,000 programme of advertisements and brochures has reached a large number of girls and had some influence on their future exam choices. It plans to run a similar campaign next year.

Ms Marijke Bolle, a Ministry spokeswoman, said: "Girls tend to study those subjects they think they are good at, but we encourage them to study

"But they realize eventually they can't get the job they want, enter higher education because they dropped pure science subjects early."

Only 60 per cent of Dutch secondary schools choose to offer pure sciences as an exam subject compared with more than 80 per cent of boys.

The Ministry's campaign also says that they may need to have an idea about subjects if they get ahead in fields which immediately appear highly prestigious, such as photography, painting or health care.

The attempt by the Dutch Government to promote technical subjects among girls, with increasing signs of shortage of young professionals in computer science and chemistry.

Philips, the Dutch electronics and the country's largest private employer with a workforce of 70,000 recruited last year for demanding technical jobs because it could not find enough young Dutch men and women with same level of scientific training.

Most teachers point out that girls to consider studying science, there have been criticism on their part.

Some teachers point out that it is difficult enough as it is for schools to find science staff and to compete for industrial salaries. They say that Government, which has been cutting back on education spending, is back on education spending, a way to boost the number of young people studying science without cutting other classes.

Ms Marijke Bolle, a Ministry spokeswoman, said: "Girls tend to study those subjects they think they are good at, but we encourage them to study



Paper chastener: publishers feel under threat from the duplicating boom

Photocopiers in bad books

Danish schools have been spending more annually on photocopying than books, a survey has revealed. The country's publishers say that, in 1984, £17 million-worth of textbooks were sold to state and private schools. But the schools estimated they had made £16 million photocopies (the equivalent of five copies per pupil per year) in the same year at a cost of £18 million.

In the light of these startling statistics, the education authorities are beginning to reassess their whole attitude to the photocopying boom in schools, which started in the 1960s and shows no sign of abating.

The average school makes 115,000 photocopies a year and the total cost of one photostat, including rent of machine, paper costs, 22 per cent VAT and royalties currently at around 5p, compared with 9p per page for a school book.

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Christopher Follett

and Judith French-Hinds

OVERSEAS

Union and Church in challenge over faith

IRISH REPUBLIC

A row over a requirement that teachers appointed to schools under Roman Catholic management should be "practising" members of the faith is still simmering in Irish primary schools.

The recent annual congress of the Irish National Teachers' Organization was told that the union's approach to the Catholic bishops who are patrons of most primary schools in the Republic. This follows the refusal of the Catholic Primary School Managers' Association to lift the requirement, which was listed in guidelines on staff appointments issued to schools.

The association insisted that, in listing the "practising Catholic" requirement, it was only putting on paper what had been the understood position for more than 150 years. It argued that, as religion was an essential part of Catholic schools, teachers had to be thoroughly versed in the faith.

But the union retorted that this amounted to discrimination and said that, outside the denominational schools, there were very few jobs for primary teachers in the Republic.

The system of local school control was devised in 1831 by Lord Stowell, the Irish Chief Secretary, in order to inspire confidence in the public system of education he was endeavouring to develop.

Although the original intention was that children of different religions would be educated together, this was opposed by various churches - not only the Roman Catholics - and the system was divided along denominational lines. It has remained that way ever since.

There are about 3,200 which have as their patrons the local Catholic bishop; some 250 schools with Protestant allegiance; and a dozen which, for historical reasons, come under the aegis of the Education Ministry; and a few dozen other "special" schools for handicapped pupils.

In recent years, there has been a movement towards multi-denominational schools - three have been set up and a few others are planned.

The Ministry pays all the teacher salaries and most of the running and building costs for primary schools. But it will not become involved in the "practising Catholics" row on the basis that the schools are private institutions.

Both the managers and union have obtained legal advice on the matter. If, as seems likely, the bishops also refuse to lift the requirement then the union will consider pursuing the matter through the courts.

John Walshe

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LETTERS



James Callaghan: Ruskin speaker

Lore lord

Sir - Coming back from holiday I had no need to replenish my stock of bedtime fiction. Lord Donoghue's Platform article on Mr Callaghan's Ruskin speech (TES, May 29) was an adequate substitute. He writes of how in "many dealings with the NUT... I never once heard mention of education or children". The fact is that Lord Donoghue had no dealings of any kind with representatives of the union, which explains the ludicrous absurdity of the second part of his statement. It is also quite extraordinary to read an account of the provenance of the Ruskin speech which makes no mention whatsoever of the secret Yellow

Book prepared for the Prime Minister by the DES and leaked to *The TES*, which public-spiritedly published its tissue of distortions, half-truths and plain whoppers. It was the *Yellow Book* which was the occasion for the speech, which was hyped to the skies in advance.

Lord Donoghue claims credit for drafting the speech. He is welcome to the credit for a very poor effort which was in fact drafted by an official who will now be grateful to be relieved of the responsibility by such a distinguished writer of fiction.

MAX MORRIS
Former president, NUT
44 Colnurst Road
London N8



Bernard Donoghue: Ruskin author?

Solihull did its CTC spadework

Sir - I have rarely been driven to reply to an article, but "A revolution begins in Solihull" (TES, May 29) was an unimaged and downright mis-statement.

The location of the city technology college, Chemsley Wood, is not a squalid, inner-city area. This "new town" area of Solihull demonstrates a sensible community lay-out, with green open spaces and ease of access. I take exception also to the statement that "there is little evidence that the (Solihull) politicians listened to the educational arguments... before leasing the site". The educational background was set out fully in the director's report to the education committee on February 4, 1987, and that report generated a thorough and reasoned debate in which arguments of

curricular choice, standards of attainment and organizational viability occupied the highest ground.

The education committee did not "go against the advice of education officers". The director, in his report, warned that there could be a knock-on effect on pupil numbers at a borough school but suggested, conversely, that the authority could easily adjust admission limits to take account of this factor. That advice was intended to be objective and was taken as such by the committee.

Your report quoted an anonymous spokeswoman within the education department at Solihull. Upon investigation, I have learned that the alleged "spokeswoman" was a secretary within the department endeavouring to be helpful to your reporter. Your reporter spoke neither to the

director, nor to the leader of the council, nor to me.

The account goes on to refer to 800 Birmingham pupils fleeing "to the leafy glades of the south" (Solihull), and of a further 320 being required for the CTC. There are actually already 1,000 Birmingham secondary pupils in Solihull schools, north and south, and, since a catchment area for the CTC is still awaited, the precision of your correspondent's figure is even less reliable than his 20 per cent error quoted above.

It is stated that the director fears for second-phase TVEI in Solihull in 1988. He does not. It is stated that the i.e.a. has sought to distance itself from the CTC. It has not. It is stated that, over the CTC issue, "Solihull is already divided". Where is the evidence for this, beyond a scrawny handful of

unattributable vox populi reactions?

The truth is that the only public meeting called to protest against the CTC foundered, as almost all the parents who attended were supportive of the principle. And, at the official handover of Kingshurst school to the Hanson Trust, Meriden Labour Party was represented, in the heart of a Labour-dominated area, by one protester.

Alas, your article is typical of so many emanating from the educational press that have sought to rubbush the CTCs. To paraphrase one more illiterate than your reporter - opinion is cheap, facts are bought with greater leg-work.

GEOFFREY WRIGHT
Chairman
Solihull education committee

Touch of TVEI

Sir - I thought Ian Nash's article about the Solihull City Technology College captured the rather embarrassed confusion and uncertainty that surrounds this institution, the philosophy it represents, and its possible effects on local state education.

The staying-on rate in north Solihull concerns us all. What does need pointing out is the effect of the Technical and Vocational Education Initiative project in that figure. The Solihull scheme is based on a consortium arrangement which involves some students travelling to different school sites for whole morning sessions.

The staying-on rate of my TVEI students following our own media technology course and attending other TVEI courses is 33 per cent and will increase again this year. This shows what can be done when teachers are given the resources to develop imaginative, technologically-based

courses which have post-16 progression routes shared with other schools.

I have considerable doubts whether a CTC intake, compiled as a result of parental interviews and aptitude testing of 16-year-olds, is going to increase the staying-on rate. What it will do is concentrate a number of well-motivated students (or students with well-motivated parents) in one heavily-resourced institution with considerable implications for the quality of education offered in other schools. When adult unemployment is running at 30 per cent, you do not look to schools to solve the problem of inner-city areas. They can do something by sharing resources and expertise and working closely with post-16 institutions and local industry. The CTC approach makes this task far more difficult. God preserve us from our allies!

RICHARD METCALFE
Head, Simon Digby School
Chemsley Wood
Birmingham

Full benefits

Sir - The article on "Adult training schemes condemned" (TES, May 29) gave a totally inaccurate description of the training available under the new Job Training Scheme, and I feel that such ill-informed comments can only serve to increase hostility to it.

There is no rigid format to the training provided. Each training package is tailored to suit individual needs and the local employment market. All individual programmes are a combination of direct training and practical experience, the former of which is arrived at by negotiation involving the trainee, the managing agent and the work-experience provider.

The penultimate paragraph of the article stated that the trainees "are paid an allowance equal to their supplementary benefit but lose all other allowances because they are effectively employed". In fact, the training allowance is at least equal to the amount of unemployment benefit or supplementary benefit that the trainees received before joining the scheme - the minimum amount payable being £24 per week, so that trainees who have been receiving less than £24 will in fact receive an increased amount.

All other benefits to which the trainees were eligible before joining the scheme, such as housing benefit, help with prescriptions, dental charges and so on, are still payable. In addition to this, the trainees retain their UB40 with which they can obtain travel

passes for entry to leisure facilities and the like.

PAULINE MILLER
JTS manager
Grimsby College of Technology

Training mix

Sir - In your report on the NATFHE conference, one item contains the sentence: "Eight out of 10 places on JTS would be in private colleges such as Sighth and Sound and Pitmans, recently criticized by the MSC for their lack of trained teachers."

I would like to state that there is no truth in the statement that the MSC has criticized Pitmans for the use of untrained teachers. For the record,

rates for entry to leisure facilities and the like.

PAULINE MILLER
JTS manager
Grimsby College of Technology

MARK CPITMAN
Chairman
Pitman Education and Training
154 Southampton Row
London WC1

ROYSTON PARISH
Director of Marketing
Pitman Examinations Institute
Catteshall Manor
Godalming, Surrey

Nothing new

Sir - I was interested to read features on Feuerstein's work (TES, May 29). In balance it pointed out that since Brainerd's comprehensive review of learning enrichment people have been more circumspect about its use.

Clearly Feuerstein is a man and his views are attractive. It is really nothing very new that ability is not fixed, at least in a child's problems. More conventional and "comfortable" given. The suggestion that Feuerstein's work enables a broad range of thinking to be developed in teachers and psychologists is much more to do with old-fashioned

search bear out the large differences made for Instrumental Enrichment. As with most "wonder" to magic ingredients but to the initial success seems to be a result of the selection of a well-qualified candidate. The lesson that comes from this is that in evaluation of such programmes for helping children with learning difficulties there is no room for success.

GARY THOMAS
Senior lecturer
Department of Educational Development
Oxford Polytechnic

Thinking ahead

Sir - You have carried articles on the work of Professor Feuerstein and development place in Somerset following Instrumental Enrichment.

Those who have read the may also be interested in the group was set up more than a year ago and formally constituted as a member of the Association of Building and Construction Industry (TES, April 10). It is a study of Curriculum at the conference in April this year.

The purpose of the group is to provide a forum for all those involved in the active development of skills. Membership is open to individuals or groups and includes teachers, trainers, and members of the Careers Advisory Service. More than 60 regional groups of the service have been briefed by the Institute for Children and Young People about the industry as a whole, with

intended to continue a policy of encouraging research and developing the principles underlying skills programmes and their application across the school education and training community. It will be pleased to provide information for anyone interested.

GRAHAM KELLY
Chairman
Thinking Skills Network
Turners Court
Benson, Oxford

Singapore view

British teachers tempted abroad wanderlust and the illusion that the grass is always greener on the other side of the world can only benefit from a recent, first-hand information about some of the realities they would face. But Clive Linke's portrayal of education in Singapore (TES, May 29) would actually do more harm than good.

Wonder how the average member of the Singaporean educational community will react to the assumption implicit in Mr Linke's article that only Singaporeans - and presumably only Singaporeans - know what curriculum and teaching methods are most appropriate for that country. His article is a masterpiece of self-criticism, and it is not surprising that it has been criticized recently by the Singaporean Commission for the Training of Teachers. It would be a pity if it were not for the fact that it was written by a man who has been in Singapore for some time.

We in Britain are just going through the throes of a vast exercise of self-criticism about our curriculum, our teaching styles, and about the standards of our pupils' learning. Specifically in relation to the teaching of English, the subject focused on by Mr Linke,

we now have the Kingman Committee querying whether the "creative writing" approach which has been so prominent in the English curriculum for three decades is in fact more productive work in developing pupils' language than formal and explicit language work to express themselves effectively in their own language in a number of different contexts.

Yet here we have Mr Linke castigating Singaporeans for not swallowing wholesale a pedagogy whose value is not only now suspect in relation to native speakers of English, but must be more open to question in the Singapore situation where English is taught as a second language.

Mr Linke makes much of the conformity of behaviour and dress expected of teachers in Singapore. There are many parents in Britain who resent what they regard as unacceptable examples in these matters by some of our own teachers.

Put yourself in the position of the Singaporean parent who sees around him, in many parts of south-east Asia, the traditional customs and standards threatened by the often corrupting effects of tourism and the immediate effects of the hippies. If there are

Prejudice on the panel puts women off promotion

It is a regrettable fact that women are under-represented at middle management levels in secondary schools. The conventional and "comfortable" explanation for this is that women do not apply for these posts in sufficient numbers. From my own experience, I suspect that the true explanation has much more to do with old-fashioned prejudice.

Over the past year I have applied for seven head of mathematics department posts and at the eighth attempt I have just been successful. I was a well-qualified candidate, having been head of department for four years and this is borne out by the fact that I was invited for five interviews. The short lists for these five interviews comprised 11 women and 15 men. All these short-listed candidates were competent, experienced and suitable for the post. The successful candidates in all five instances were men.

The schools were all maintained, comprehensive 11-18 or 14-18 schools. In the Midlands. In three cases the acting heads of department were unsuccessful members of the short list - all three were women.

Briefing sessions provided some of the information. Doubts were

great success. The lack of knowledge discovered by our representative is worrying and it is hoped that the balance is now well on the way to being redressed.

There is a place for the female artisan and technician in the industry but there is an even greater and more vital place for the manager and technologist. This has been recognized in the recent report of the Lighthill Committee by one of its pleas for Government pressure to provide more places for building degree courses. Abundant opportunities in the many fields of building exist for qualified women from design to quantity surveying, to planning and site management to name but a few of the practical

which Mr Baker has imposed. Laurie Smith's concern for the legal liability of teachers undertaking voluntary activities with pupils is a red herring. The new regulations change nothing in this respect. The key to the matter is the approval of the activity by the head and the local education authority. Directed time is the time when a teacher is required to be available for work. If he/she chooses to work beyond that time, the employer's responsibility is exactly the same as it is during directed time, so long as the activity is approved and does not contravene i.e.a. regulations.

JOHN SUTTON
Salaries and conditions
service officer
Secondary Heads Association
107 St Paul's Road
London N1

CHARLIE HENRY
Quadrant Road
Gosberton
Lincs.

Double faults

Sir - In reply to Sylvia Barratt's letter (TES, May 22), the main point that emerged from my study of twins in primary schools was that there was only a limited awareness of the issues that may be relevant and the difficulties that may arise when twins are in the same or in different classes.

Consequently, there must be concern for those twins whose parents assume that the school knows what is best for their children when, in fact, the school may be unaware that there are issues to be considered or has made its considerations on only limited information.

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LETTERS



often expressed about a woman's capability to cope with home, family, considerably journey to work and departmental responsibility. Despite obviously successful experience over several years, chairmen of governors tend to think that a powerful voice and athletic appearance are essential to keep order in a classroom.

Most disturbing of all was the suggestion that for a woman to be appointed, she had to be clearly better than the male candidates with whom she was in competition, otherwise the

appointing panel could be accused of leaning too far in sympathy with Equal Opportunities legislation. I would be glad to hear from other women candidates for comparable posts who have had similar experiences. Some of them may have been too discouraged to continue their search for promotion against the odds.

A VERONICA WARNER
149 Howard Road
Clarendon Park
Leicester

aspects recognized by the institute as the chartered body for the professional building. It is a great shame that the wider aspects of careers for women in the construction industry were not revealed. They are available in many varied and interesting facets. Perhaps *The TES* will fill the information gap in the future.

N J NICOLS
Head of membership and examinations
The Chartered Institute of Building
Englemere
Kings Ride
Ascot
Berkshire

March of time

Sir - May I make a couple of points which arise from the interesting correspondence (TES, June 5) in response to my article on "Counting the hours" (TES, May 22)?

Paul Farmer believes I am falling into the dangerous trap of ensuring that professionalism will never return. In fact, his model is very similar to mine but, while I wish he was right, I fear he is mistaken in hoping that, having made it, he can then put it away and forget it. John McKellar's letter on the same page makes it plain enough that some teachers are not going to let that happen. The truth, however regrettable, is that we cannot go back to the standards of professional performance within the framework of new law

which Mr Baker has imposed. Laurie Smith's concern for the legal liability of teachers undertaking voluntary activities with pupils is a red herring. The new regulations change nothing in this respect. The key to the matter is the approval of the activity by the head and the local education authority. Directed time is the time when a teacher is required to be available for work. If he/she chooses to work beyond that time, the employer's responsibility is exactly the same as it is during directed time, so long as the activity is approved and does not contravene i.e.a. regulations.

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TALKBACK

FEATURES

DISTURBED BEHAVIOUR

A bleak picture

Jan Norbury

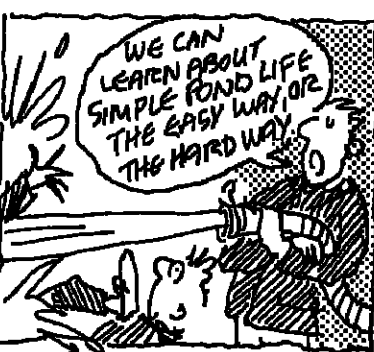
With the help of Phil Carradice's article (Talkback, May 29), I have been able to draft a suitable advertisement for a much-needed extra class teacher.

Wanted, a well-qualified and experienced "pout mug" to be "cannon fodder" to a group of children "who are disinclined to learn". Applicants must be aware that "the job of purposeful control involves time, effort and pain". Salary paid one month in arrears if the candidate lasts that long.

One thing is certain, I shall not need timetable-cover to conduct the interviews.

A bleak picture is painted for any teacher of children who are emotionally and behaviourally disturbed if the authority held by the head is not also shared by the staff. Once the children see a whole team approach to care, control and education, their equal respect is awarded to every team member.

There are various ways in which this can be achieved, but all need the emphasis on time and effort rather than "pain". Teachers need a structure in which to have "purposeful control".



and the structure must be the result of consultation, evaluation and adaptation. We have found some of the most effective strategies to be:

- A clear care and control policy which is understood by each child.
- A curriculum which is adapted to suit the needs of each child, with all teachers responsible for one or two subject areas.
- Staff support through timetabled supervision and informal supervision.
- Daily recording of behavioural and educational objectives and achievements which is discussed with the children. (This gives perspective to occasional "bad" sessions.)
- A tutor system whereby the class teacher has overall responsibility for the child's education and represents the school at meetings with parents and professionals.
- Many out-of-school meetings and INSET courses where all staff contribute to school policies.

Perhaps it is time to re-word that advertisement.

Wanted, a well-qualified and experienced class teacher for a group of children who have not experienced success in any other school. Applicants will be well-supported by a hard-working and caring team of professionals in a firm yet empathetic environment. Job satisfaction is enormous when you achieve what previously was deemed impossible.

Must go, as I have to phone the supply teacher to cover for me on interview day.

Jan Norbury is deputy principal at Dr Barnardo's, High Cross School, Wokingham, Berkshire.

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 41600-41800 hours 2006-2015 yrs
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FEATURES

It's fun but is it education?

by Geoffrey Samuel

I read the *News of the World* last week. I found it on my deputy's desk. She maintained that she intended to use it in assembly. Perhaps to give artistic verisimilitude to an otherwise bald and unconvincing narrative.

Anyway, I borrowed it and took it home. Of course I enjoyed it. There were allegations about politicians, innuendos about members of the Royal Family, stories about vicars - and photographs of people, some of them in clothes.

But I looked almost in vain for any facts. Straight reporting, even of cricket matches, was hardly to be found.

It is tempting, if patronizing, to reflect on the consequences of more than a century of public education. A comparison with the first popular daily, the halfpenny *Daily Mail*, is certainly revealing. Even *The Times* has resorted to short paragraphs and an increase in photographs. Why has this happened? Should schools be concerned?

Of course we must accept that schools operate within a given social context. Readers of the original *Daily Mail* had no radio, no television as competition. Today's popular press exists in a competitive climate. Some might suggest that education should temper that climate. I believe we are doing the opposite.

During the past few weeks I have visited many classes preparing pupils for the GCSE. I have been impressed by many of the new approaches. But I am worried as well. The simulated radio - or television - interview is ubiquitous, the relationship with the world of entertainment undeniable.

It is tempting in a variety of subjects to simulate pupils to prepare and execute an "interview" with a character from history or from literature. But where is the rigour?

It is possible to stage mock trials or planning inquiries or public meetings. It is fun; it engages the attention and enthusiasm of pupils. But will this establish in the minds of pupils (particularly those in top sets) the mental discipline that advanced study will demand?

Are we even preparing our pupils for the depth of consideration and reflection that mature political judgement requires? If one of the purposes of education is to "stretch", to introduce pupils to new horizons, then the new process-orientated approaches are a dismal failure.

Fifteen years ago, in the heyday of resource-based learning, integrated courses and relevance, I attended a lecture on "raising the school leaving age". The speaker confidently told his anxious audience how he had coped with a group of irreconcilable 15-year-old boys. Exactly half the week was devoted to a motor bicycle. They worked on the machine and, he averred, "learned from their experiences".

None of us had the temerity to enquire whether this really was our brave new world of secondary education for all. Of course experiential learning has its place in modern education. But I fear that too many teachers of so-called academic subjects are now - metaphorically - devoting the entire week to the motorbicycle.

Not this at all. I recently attended a departmental discussion on the choice of a new textbook for the first three years. They were all expensive. A glance inside told the story.

It was lavishly endowed with photographs, pictures, drawings and cartoons. The actual text - and this book was designed for pupils of all abilities - was kept to a minimum.

So this was what we had before us. An educational equivalent of the *News of the World* for everyone. I do not question its ability to entertain. But I seriously doubt whether this should serve as the only textbook on the subject to be set before the pupils for three whole years.

A recent report disclosed that only a derisory number of teenage boys read for pleasure. They find it "boring". No wonder. Modern novels rarely have the pictures and cartoons that schools, by implication - regard as the *raison d'être* of a book. We are all adherents of Alice now.

Where is it all to end? I do hope that proponents of the new methodology will at least reflect. If we are to produce a society capable of reading and reasoning, willing and able to consider issues in depth, prepared to make an effort to understand - then we must step back from media-orientated education and have the courage to affirm that learning requires both concentration and commitment.

It is not enough to have a headmaster who is a member of the school board. It is not enough to have a headmaster who is a member of the school board.



Together we stand

Jean Abbott and Tony Hurlin describe how a group of primary heads learnt to share their burdens

Low morale has bitten deeply into the work of many primary schools. Insufficient funding and the constant public under-valuing of teachers has placed heavy burdens on headteachers and some of the more severe effects of the industrial dispute are likely to persist for some time to come.

In frequent contact with colleagues and the lack of insight into the work of other schools has left some heads caught up in a growing isolation. They often feel that all their energy is required to keep things going from day to day.

The task of developing and improving their schools, of extending their own vision, and that of their staff, and of creating new and relevant opportunities for their children has, in some instances, virtually ceased.

The Cambridge Head Teachers' Support Group is a self-help antidote for this contemporary complaint. Busy heads have to become adept at trading off one commitment against another - so the group has been a profound success. Judging by attendance at our meetings. All those who joined the group at its inception have stayed on. Several others have asked to join and attendance is usually 100 per cent. Whatever this kind of group can offer, primary headteachers seem to want.

At its meetings, the group has provided opportunities to discuss real school-based problems and the task of school improvement; to work with another professional as a consultant; to develop ways of visiting and being visited by colleagues; and to enjoy the critical friendship of other headteachers.

The idea was first generated during the Schools Council Self-Evaluation Project which began in 1990. Twelve Cambridgeshire headteachers, of large primary schools worked together for three years with a management consultant to develop practical ways of improving their schools. At the end of the project, some of the group decided to go it alone and extend these ideas locally.

An arbitrary limit of 12 members was decided on by two of the original group, and verbal invitations were put round in the summer of 1984. Everyone approached accepted. Four were newly-appointed heads and the others were all into their second headships.

The group appointed a secretary to remind us about dates and circulate the agenda. A lecturer in primary school management at Cambridge Institute of Education was asked to become the group's consultant. He also offered a neutral place to meet and the twice-termly meetings began.

Originally, there was no chairman. From time to time, the group's consultant would intervene and urge clarification or offer a summary of what had been discussed. More recently, it has been a regular chairman emerged.

The heads' concerns fell into three distinct categories: organizational, managerial and philosophical. The first two were the most common, and the third the least. The first two were the most common, and the third the least.

Members began to bring along real problems for collective analysis - rather uncertainly at first. The idea of speaking openly about professional difficulties did not come easily. Some of the group wondered why - and concluded it was lack of practice.

All the schools were known to all the members to varying degrees. It was, all agreed, an often uncomfortable direct experience but none were deterred. As one head put it: "If we can't be honest with each other, I can't see a reason for the group."

Everyone recognized the need for professional confidence and sometimes codes were used to appeal for it - "I hope the group won't let me down on this" or "In telling you this, there is clearly some risk".

As time passed and as personal knowledge of each other grew, the meetings became characterized by a gentle, probing humour - a sort of professional sparring - a little provocative but really harmless. The real test would come when heads made visits to each other's schools which might reveal something fundamentally wrong.

How would they communicate that? What would the head say when staff asked: "What did the visitors think?" Would an opportunity for professional growth and development built over months be allowed to slip away?

There had been talk about the possibility of paired visits to each other's schools - but it was only talk. The heads suspected potential hazards and skirted round the issue. Industrial action caused problems and provided a real excuse for delaying the visits.

Later, some of the group were to confess that they felt "junior" in status and less experienced. They felt they were simply not competent to judge the schools of colleagues who seemed to be older and wiser. Anyway - how should a school be judged? How can a valid assessment be made on an impression? Is a morning really long enough?

This impasse needed real push from within, not because the heads were unable to take criticism, but because they were professionally unable to make it. The apparent unwillingness was largely an unwillingness to say something hurtful or upsetting - the pain of the truth being felt by the giver rather than the receiver. Who had taught them or prepared them for this fundamental leadership activity? What were the implications for the school? What were the implications for the group?

It was not until the group had been established for some time that the heads began to see the value of the group. It was not until the group had been established for some time that the heads began to see the value of the group.

to be learned after what was for some, many of headship?

Failure actually to communicate with other led to one confession: "But I wanted to say something damning". A carefully disguised criticism is very often open to misinterpretation. Is something wrong? Is it wrong but won't be it? Does he really know if something is wrong?

After a year, there had only been three visits. No formal reports had been written and school had yet been the focus of a group meeting.

The decision taken, we went in pairs - mutual support being needed more for the visits than the visits. The heads hoped to gain a new perspective and then reflect this back in the form of a supportive critique. The group has grown a total commitment to "critical friendship".

Regular visits to schools now take place followed by discussions within the whole group which are sharpened by written reports. The ground is broken at all meetings with some sensitive issues up front.

An early decision was taken to introduce external speakers into the group. The idea was to counter the spiral of introspection which some self-help groups so self-obsessed that they lose sight of their original purpose. On reflection, it merely proved to be a mutually self-avoidance strategy. The venture was unsuccessful. Time was best spent talking, looking back, telling back as openly as possible, we reflected afterwards.

The group's strongest asset was the collective knowledge and experience of 12 headteachers who were determined to improve their own schools through self-support without any real knowledge of the way it might be done. There was something in our tradition, it seemed, which prevented activity from occurring. Communication at the level had not been thought to be a necessary desirable professional skill.

Responsibility for future development lay within the group itself. There is no obligation on any other organization or individual. There is no external inspection of the groups' work. An outsider has any mandate to evaluate the work or to change its direction.

The future lies in the group's ability to respond to the changing needs of its members. A headteacher can only justify time spent in the group if there are observable benefits to his schools and to each child within them.

Can its work be replicated, or is it a one-off idiosyncratic response to a temporary set of circumstances?

If others can adapt and develop these principles and work together towards personal self-development, then the remedy will lie mainly within the patients' own control. There is no need for purgatives or surgery. Self-help has always been best.

Jean Abbott is head of Mayfield primary school, Cambridge, and Tony Hurlin is head of a primary school in Hampshire.

PUPIL REACTIONS

Maths is interesting when... the teacher does not go "waffle, waffle, waffle" page 64, exercise A, B, C, D". It's difficult in this class because we are not just doing routine work, we practise something important - thinking.

The bottom set does all sorts of interesting things and they find out lots of information and I feel so sorry for the top set because they have to copy pages and pages of work out of the book.

I think it gives us a very good chance to do better. I like it because we are our own boss and we are much more independent. It is much better than starting at the teacher for a lesson or two.

When I done pages and pages of work I used to hate and dread going to the lessons. Now I like maths because we solve things.

The reason I enjoyed it is because the beginning of the work may have been set but then you had the freedom to work on the subject as you wanted to. The thing I learnt most is how to use, and the meaning of, mathematical terms - for example, the decimal point and fractions.

I think I have learnt that the more you find out there's always something to go on to.

Down our old school we always did sums and you don't really find a lot out in sums.

I used to be terrible at maths. These lessons have given me much more confidence and now I understand things better. If somebody gave me a maths problem, I would investigate the problem and I would be able to work it out.

part of a continually growing network of working groups involved in improving pupils' achievements, attitudes and confidence in mathematics. Although initially concerned with the bottom 40 per cent, teachers involved with LAMP soon found that the strategies they were adopting in their classrooms were improving the attainment and confidence of all the pupils they taught, including their sixth-formers. For, despite having good examination results, many pupils are under-achieving because they are unable to transfer and apply their mathematics.

LAMP's success has led the DES and 34 local education authorities to fund a further three-year project, Raising Achievement in Mathematics Project (RAMP 1986/89). This aims to deal with the general problem of underachievement in mathematics throughout the age and ability range.

At present, the education system itself is underdeveloping. If we want to raise the level of educational provision in mathematics, we must develop the professionalism of teachers, their confidence and their expertise, as ultimately they are the only people who can directly effect improvements in the quality of children's learning experiences.

LAMP found that through teacher development, pupil attainment and competence with the

ment, pupil attainment and competence with the

New LAMP for an old problem

Frankie Sulke and John Mitchell describe the approach to teacher development that brings maths to life



well-motivated departments, these stand little chance of achieving national curriculum change because they become detached from the original source of inspiration.

LAMP's experience shows that, without personal involvement, attempts to provide schemes, reports or guidelines on the teaching of mathematics are very likely to be misinterpreted or ignored. Even though the materials teachers use in the classroom may change when they adopt a new scheme or change examination syllabus, their approach and their pupils' mathematical experience will be essentially the same.

For all these reasons, the crux of LAMP's and RAMP's dissemination strategy is personal contact. Within LAMP's six local education authorities, we have already seen the power of such contact in the form of a variety of teacher working groups.

The focus provided by the project has enabled connections to be made between the various groups. They draw and feed from each other, and together they form a powerful and ever growing support network.

The organic nature of the LAMP network ensures that the type of detachment described earlier can never occur. Its growth depends on the teachers within it. They feel they want to share their successes, but they are not disseminating a set of materials, nor even a set of ideas.

TEACHER COMMENTS

One of my main aims is getting rid of fear - fear of asking questions, fear of "getting it wrong".

We are preoccupied with relevance... I believe relevance occurs if the student is interested in what he or she is doing.

The pupils have started taking more responsibility themselves for what we do in the classroom.

I know that unless my thinking about mathematics teaching had been changed... without a revolution in my philosophy... none of the changes which I am now trying to effect in my classroom could have come about.

If I had merely tried out new methods on somebody else's recommendations, then in the face of difficulties I would just drop the ideas.

It has made me question every aspect of my teaching, including things that I thought I was doing well. This has been quite traumatic but essential.

All too often people look at pupils' work from other teachers and say "Mine could never do that." This co-operative teaching has been an opportunity to see (your) own pupils enjoying and getting involved in mathematics... producing work (you) never thought they could.

Surrounded by more able mathematicians... I have become more aware and sympathetic, having experienced the feelings of inadequacy myself.

Apparently quick and easy solutions are not going to work.

They are, instead, involving more and more teachers in a way of working together that enables them to develop their own strategies and hence become more confident and competent in their classrooms.

Dissemination of this kind is not easy or quick, but it is effective and long-lasting, because it is firmly rooted in the personal experiences of teachers in their classrooms.

Teachers do not view their own development as a fact that will disappear, along with all the others, because their beliefs about learning and mathematics have changed.

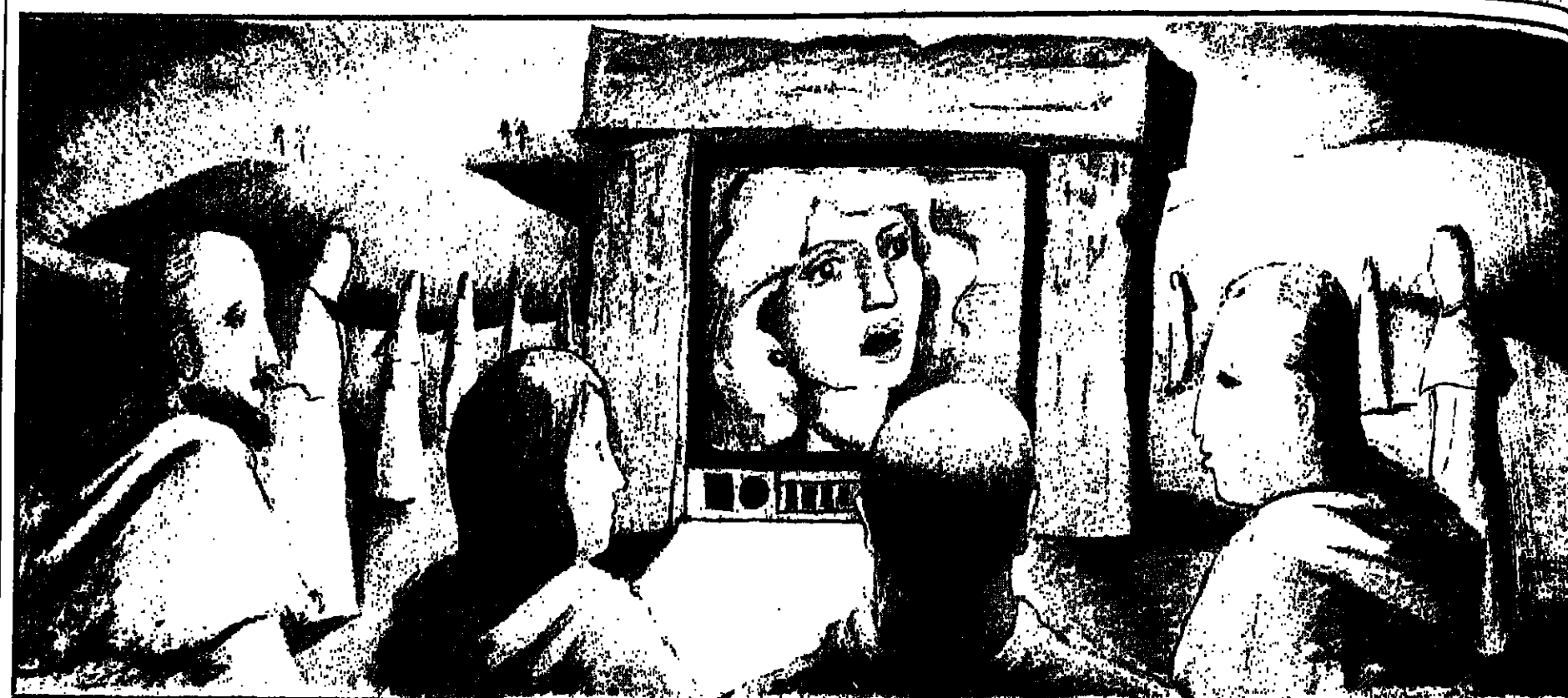
To invest in people is always costly in more senses than money. But it is the only basis for improvement in the quality of mathematics education.

LAMP was based at the Mathematics Curriculum Development Centre, West Sussex, Institute of Higher Education, Upper Bognor Road, Bognor Regis, West Sussex PO21 1HR. It was directed by Aziz Ahmed, a member of the Cockcroft Committee, and 12 teachers were seconded for one day a week for three years to work on the project. A report is due to be published in September. Frankie Sulke is a maths teacher at Tideway School, Newhaven. John Mitchell is head of the maths section at the WSHS.

Often, the in-service work associated with this kind of dissemination focuses only on clear explanations of how to use material. Whereas the development of teachers' own ideas and strategies for teaching mathematics is the key to success.

When groups of teachers have shared together, the

Review



"... the long and tedious maxims of druidical religion..." (Lemprière, *Classical Dictionary*, 1828.)

A contributor to *TV and Schooling* (1985), asserts that: "It may be that a new emphasis on language teaching would transform thinking about where the sites of language are; from the present almost exclusive print-dominated media, like novels and other forms of print-publishing, to audio-visual media like cinema and television."

This statement (leaving aside, for the moment, the implications of "exclusive" and whether it is a misprint for "exclusivity") illustrates a paradox of literature on the audio-visual media. Not only do theorists of visual communication contribute extensively to "print-publishing", they also readily use literary terms: "visual literacy", "alternative readings", "texts", "narratives", "rhetoric", and so on.

If David Lusted did intend to describe the printed word as "exclusive", he was probably suggesting that it reaches a smaller audience than television or film. Any conclusion from this is debatable; what is clear is that a large body of writing on communications and cultural studies, and most strikingly on popular entertainment, is not addressed to the audiences for literature or the visual media. In fact, its language deliberately restricts the circulation of critical theory to a small

They show a special fondness for the verb 'to construct': the architectural figure is the temple of the Druidic mind

clique of initiates:

"A further elaboration of the post-Althusserian position, popular within film studies leads to its elaboration of a theory of autonomous discourse effectively to an evacuation of the field of historical materialism, whatever its materialistic rhetoric, placing its determinacy in the last instance on the unconscious as theorized within an essentially idealist, indeed Platonist, problematic."

To which, in what may be a moment of self-criticism, the author adds: "Such idiocies need detain us no longer." Anyone familiar with the field will recognize these as the pure accents of Druidic, the dialect of media, film communications and cultural studies. At first glance, this kind of writing might be mistaken for jargon, a shorthand for expressing new concepts in a technical discipline. But that is not the case.

As we have seen, for the majority of readers, their acquaintance with the [James Bond] novels was mediated by their prior familiarity with the films, suggesting that the films constitute a determination that must be taken into account in assessing their relationship to, and mode of reading the novels. This entails a more complex construction of the relations between the films and the novels than is usually implied in analysing films, derived from some pre-existing fictional sources. Normally such relations are construed as transpositions.

What this means is that most readers come to their reading of the novel after having seen the film adapted

Deep Druidic lore

The 'media studies' priesthood have done what self-appointed priesthoods always do, throwing up mystificatory smokescreens round their pretentious activities. Robin Buss penetrates the grids of intelligibility and the imbricated narrative tensions

ions, so their understanding of the books is influenced by what they have seen in the cinema. Such a bald translation might be adequate for the audience of *The Spy Who Loved Me*, but this audience is not the one addressed here (any more than when the same authors describe a Bond villain as "a phallus articulated to social, political and sexual deviance"). Druid speaks only to Druid.

"The Profound mysterious Theorems of that learned Sect, how'd in the choicest and most elaborate Language of the time." (Henry Rowlands, *Monu Antiqua Restaurata*, 1723.)

The authors of *Bond and Beyond* are no novices in the use of the dialect. Of course, they do have a smattering of jargon words, contrasting intertextuality with inter-textuality, and distinguishing both from Pierre Macherey's notion of intertextuality (with a pedantry not extended to the proof-reading of their manuscript or the elimination of two references to "Laurence of Arabia"). However, what identifies their work as Druidic is not the shorthand of jargon, but the particular use of such terms as to mediate, to construe, to entail, to articulate, to constitute as (e.g. "the constitution of a text as literary", for which they discover the neologism *literarisation*) and to organize (usually with a non-animate subject, as "a text organizes its reading").

They show a special fondness for the verb to construct: the architectural figure is the temple of the Druidic mind. Its space is marked off by hallowed thresholds: inside/outside, foregrounding, postulating, subsuming, closure. Problems of knowledge and "ideological positions" are constructed. There are "narrative constructs" and we meet "a feminine subject constructed by romances". This architecture is complemented by the "terrain" around which "cultural business is transacted", to make "a grid of intelligibility", "a network of cultural and ideological concepts" and "frameworks of inter-textual reference", leading to "ideological articulations" and "imbricated narrative tensions".

The hopelessly mixed metaphor is a constant threat (though rarely seen as such). This chapter has intended to argue that the moment of threshold in popular entertainment has been turned away from speaking for oppression by the centrifugal forces of national consensus, which then represent their interests and welfare and improved conditions of life with a sense of cultural loss. Paradoxically, this process has been designated as a "threshold" and

The symbolic nature of all language can hardly excuse moments of threshold being prevented from speaking through negotiated processes by centrifugal forces of consensus. But that is not the point. The supposed virtue of this lies not in its comprehensibility, but in its difference from the analytical, discursive prose of the "dominant ideology". At no other time and in no other discipline laying claim to academic respectability, would it be possible for a writer to be taken seriously when referring to:

"... a powerful system of patriarchal authority consisting of immensely convoluted male/middle-class/white/knowledge/television/consumerism/important/dominant/objectivity equations". To evade the power of Imperial Rome, the Druid retreats into the impenetrable thickets and sacred groves of Druidical discourse.

"... the druids, who lived together in colleges or societies, after the Pythagorean manner, and philosophizing upon the highest subjects..." (Hugh Blair, *A Critical Dissertation upon the Poems of Ossian*, 1793.)

The book quoted above is called *High Theory/Low Culture*. Ostentatiously rejecting the distinction between "high" and "low" culture, academics in the field of media studies turn their attention to the Bond films, to soap opera, to game shows, to *That's Life*. They even, ostensibly, reject the distinction between "high" and "low" theory: several recent studies record, in extensive transcripts, the views of "ordinary people" about the television programmes that they enjoy.

The language bores this blurring of cultures. "Set in this context [of an overdetermined (or multifactorial) theory of causality]", we read, "this couple's responses are of considerable interest. The woman explains that she watches *Miami Vice* because of the positive correlation of 'preference' and 'availability'."

Hang on. What did she say? "Miami Vice - yes I watch that a lot. It's quite a good one; that is, and to be on a time when I'm usually coming in, so I can watch that." Conversely, she doesn't watch *Crossroads* because of the negative correlation of these same two factors.

The writer, condescending to describe such opinions as being "of considerable interest", transcribing them with the hesitations of speech (um, ah, er, etc.) and then in the next paragraph

language of the Druidic elite.

These writers are not to be confused with others, also in the field of media and cultural studies, who need complex language and terminology to express complex and novel ideas. The Druidic tongue is aimed at the preservation of the elite; it is a pose, giving an appearance of profundity; it is, in the worst sense, rhetorical language of mystification, not of debate.

"Such a valuation suggests that a disturbance of the system can be achieved solely through the intervention of invention - this without subjecting the system to a radical re-examination, a deliberation of how the elements of difference figured within the overall dynamics of the system of representational history or the system of narrative of which they are a part."

And that is a quotation from Screen, a journal of the Society for Education in Film and Television, an institution for the promotion of media studies in schools and colleges. Media education is the first area to suffer from this contempt for language as means of communication. Three of the English and Welsh GCSE examining boards offer syllabuses

These writers could hardly express their contempt for the 'exclusive print-dominated media' more graphically than in their inability to use print

media studies; and they cannot agree on the fundamental question of the language of the discipline, on whether students should express themselves in their own words, or use technical terms debated by their association with the field of writing I have quoted.

These quotations represent a norm, not an exception. There are few books likely to be any use to the classroom teacher or to the general reader in a field where abstruseness of language is seen not as a necessary evil, but as a guarantee of authenticity. These writers could hardly express their contempt for the "exclusive print-dominated media" more graphically than in their inability to use print as a medium for their communication of ideas. As the sites on which Druidic discourse is "constructed" become increasingly inaccessible, so the theory itself is reduced to the dimensions of an architectural folly, with disastrous results for the cause of media education and media studies.

David Lusted, "A History of Suspicion" in *TV and Schooling*, BFI, 1985.

N. Garmham, "Contribution to a Political Economy of Mass Communication" in *Media, Culture and Society*, Sage Pubs. 1986.

Tony Bennett, Jane Woolcott, *Bond and Beyond*, Macmillan, 1987.

Laura Mulvey, "Melodrama in and out of the Home" in *High Theory/Low Culture*, Manchester University Press, 1986.

Bill Lewis, "TV Games" in *Television Mythologies*, Comedia, 1984.

David Morley, *Family Television*, Comedia, 1986.

Barbara Kilgus, "Cultural Studies and the Media" in *Screen*, Vol. 24, Jan/Feb, 1983.

The last Puritans

Brian Morton on the critical freemasonry of American studies

The Unusable Past: Theory and the Study of American Literature. By Russell Reising. Methuen/New Accents £6.95. 0 416 01321 X.

American literature can seem as seductive as the raw green breast of the continent itself; and so it has proved. United States history covers a scant 200 years and American writing (for all the massive proliferations of the nuclear age) still manages to look graspably whole. There are no dark passages back to Browning and Chaucer.

There is, though, a prevailing conviction that American literature is of a piece, all of it in some discernible way inscribed with "America" itself and thus more readily decoded than class and convention-ridden English literature. Inevitably, this is no more than a comforting myth, set at some remove from the facts. The critics' effort to construct what Van Wyck Brooks called "a usable past" has been at the cost of rendering much of American writing precisely unusable.

Russell Reising has set out to show that "American literature" (the universal subject rather than the actual body of American writing) is a highly artificial and exclusive construct, limited to a tacitly agreed roster of great names and ruling out of consideration work and artists that do not conform to a particular political formula.

Anyone who has waded into American literature teaching will have felt the strong current and undertow of big "themes". These come in the main from a constellation of critical studies

which have become almost as important as the imaginative texts themselves (thus confirming Tom Wolfe's sour prediction that the art gallery of the future would display nothing but framed, glazed reviews).

No literature - except, ironically, Canadian - is so dominated by theories about itself. It is hard to resist picking a syllabus (or teaching a class) that does not even unconsciously reflect the influence of one or other of the critical orthodoxies and so constrains appreciation and understanding.

Books like F.O. Matthiessen's *American Renaissance* (1941), Richard Chase's *The American Novel and Its Tradition* (1953), R.W.B. Lewis's *The American Adam* (1955), Leslie A. Fiedler's *Love and Death in the American Novel* (1960) and Sacvan Bercovitch's *Puritan Origins of the American Self* (1975) have begun to enjoy publishing histories worthy of "classic" texts. They hover so shadowingly over literature courses that it becomes impossible to read any great literary work - be it *Moby-Dick*, *Huckleberry Finn*, *The Pioneers* or *The Scarlet Letter* - except in their shade. Worse, it means that students are unlikely to be exposed to anything outside their narrow canons or to believe that their "coverage" is anything but comprehensive.

As Reising demonstrates, such theories tend to follow certain trajectories: the idea that American literature in some uncomplicated way "reflects" the distinctiveness of American culture (or, as in Leslie Fiedler, the "American psyche"); the alternative belief that American literature is in its essence non-realist, inward rather than outward looking, thus

prone to fantasy, romance, and highly literary constructions; lastly, that all of American literature can be explained by reference back to the nation's "Puritan origins".

The last is perhaps the most blatant of all. To see America as a Puritan legacy is to confuse a political aspect with the cultural whole. America with the narrowest constitutional interpretation of the United States, and to pass over as unworthy, or at best secondary, anything produced by Catholics, Jews, blacks, Indians and Chicanos, anyone tasteless enough to be born outside New England. The upshot has been a steady ghettoization. Even as these "minority" cultures become institutionalized - black writing, Southern writing, Californian writing - they maintain a dependency on the "Puritan" norm and are treated as incidental to it.

In a careful, sensible analysis, Reising makes it clear that simply adding to the canon - token feminism, a gobble of Chicano poetry, a look at Scott Momaday's *House Made of Dawn* (the Red Indian novel), a couple of slave narratives - is not enough. What is required is nothing less than a re-examination of the way we assign literary value, together with a renewed awareness of the fact that literary texts merge in actual societies at precise historical moments and under given circumstances, not at some closed meeting of the critical freemasonry. Echoing Norman Foster, Reising repeats an easily forgotten assertion: that the supposed one-dimensionality of American literature is the fault of American critics, not American artists.

School trips

A Critical Dictionary of Educational Concepts by Robin Barrow and Geoffrey Milburn. Wheatsheaf £55. 7450 01157.

Dictionaries confirm one of life's aphorisms, the one about the journey being very much more rewarding than the arrival. How often does the casual lingering over the accidentally-encountered entry capture the imagination with sudden unexpected delight? And how dull and predictable the mundane confirmation or slight correction which comes when finally meeting the entry which prompted the search in the first place. As such times I sometimes resolve to read the dictionary to discover more gems. When I do I am always disappointed: it is as though dictionaries have an untamed quality which is elusive and unpredictable.

Robin Barrow and Geoffrey Milburn, however, have not written a dictionary at all. It is a self-confessed selection of educational concepts chosen to illuminate the issues for the educational philosopher, sociologist, classroom researcher and educationalist. It still retains the quality of delightful surprise as you encounter an entry while browsing en route to your real goal; and it has the added spice of not attempting to be neutral. Each

concept is explored for its imprecisions and the more extravagant claims of its proponents. In consequence there are frequent salutary correctives for slack thinkers like myself.

I grabbed the book first to find out all I could about "tests", but was driven to "assessments", and beguiled to "basics", "core curriculum", "common curriculum", "behaviourism", "behavioural objectives", "developmental theory", "child-centred education", "learning" and "teaching". I learn a lot in that first journey although not enough about the limitations and dangers of standardized tests which had been my original objective. Like all good reference books, however, there were sufficient pointers to complete the quest by reference to the selective (sometimes too much so) further reading at the end of each section.

These short further references combine to form a bibliography which is a cornucopia of potential further stimulation. (There are, however, some surprising omissions - no reference to the work or writings of Boyer,Sizer or even John Goodlad. No sign of David Hargreaves on this side of the Atlantic.) It still retains the quality of delightful surprise as you encounter an entry while browsing en route to your real goal; and it has the added spice of not attempting to be neutral. Each

hand use slightly different terms for the same agency, eg "local authorities", "school boards", "jurisdictions". But that is to cavil, and I'd never have noticed if the book, like all by academics, didn't make me aware of my logical limitations.

The book's system of heavy-typed cross referencing proves enticing and so, unlike most dictionaries and encyclopaedias, you are drawn on the succession of magical mystery tours, the better to understand the general field and its particular features.

The dictionary will be an indispensable addition to the libraries of all teacher-training establishments whether in colleges or universities, a must for teachers' centres and wherever principals, administrators, headteachers and advisers gather for in-service training - particularly in the UK, the US, Canada, Australia and New Zealand. It ought to be a corrective reference book for secretaries of state, civil servants and their international counterparts whose love of correct spelling and basic standards of achievement for others doesn't often extend to rigorous examination by themselves of their own ideas or to consideration of the evidence of the educational philosophers and researchers.

T R P Brighouse

Trailing clouds of technicality

Wordsworth's Historical Imagination: The Poetry of Displacement. By David Simpson. Methuen £25. 0 416 03672 7.

Following the work of such critics as Eliot, MacGill, and Barrell, David Simpson's monograph seeks to show the complexities and ambivalences of Wordsworth's social and political thinking, proposing him as the poet of displacement and alienation, and arguing against the oversimplifying myth of the "radical turned conservative". There is, he claims,

"no simple unitary public Wordsworth, a persona masterfully commanding the kind of tried and true view of the world that might reciprocally make possible an efficient habit of self-endorsement and self-consolidation."

As is evident from the tone of this quotation, Simpson has been influenced by the further reaches of French post-structuralist theory, and the worst of this book is a tendency to dress up simple matters and familiar ideas in swathes of qualification and obscuring technicality: the fuss he makes in his introduction about his "method" and procedures, for instance,

is excessively portentous and even somewhat patronizing - surely intelligent readers of Romantic verse no longer need to have it explained to them quite so earnestly that Wordsworth is not only the poet of Nature and Imagination, or that his vocabulary represents an uneasy dialectic between High Miltonic and other types of poetic discourse?

Aside from this mandarin-bombast, there is much of interest here, however, including a chapter on Wordsworth's agrarian idealism as more a "negative criticism of urbanization" than a positive affirmation of rural values, as well as some intriguing pages dealing with contemporary legislation against vagrancy in relation to poems such as "The Old Cumberland Beggar"; he also draws attention to some important neglected texts - the two-verse "Gipsies" to the epic "The Excursion".

Rupert Christiansen



Etching by Robin Tanner from *Wiltshire Village* by Heather Tanner (Impact Books, £5.95), a detailed and unsentimental portrait of rural life, first published in 1939.

Narrative teasing

Close Quarters. By William Golding. Faber £9.95. 0 571 14779 8.

I am not one of William Golding's devout admirers, but I have enjoyed his shaping of story, invention of fable, and play with language. In *Close Quarters* his powers, like his characters, are cramped. He is attempting two difficult acts of narrative, in writing a sequel to *Rites of Passage* and continuing an experimental semi-pastiche of early 19th-century English.

Rites of Passage included a hint of continuation, and this novel forecasts a successor. Like the middle child, the second member of a trilogy is in danger of losing identity, being neutralized by middlebitchiness, neither eldest nor youngest, beginning nor end. Narrative sequences are hard enterprises, and at their best have consisted of works which are members of the larger form, and - if only partially, transiently, and deceptively - independent narrations. Tolstoy's sagas and Joyce Cary's neglected trilogies are distinguished examples. *Rites of Passage* is both a necessary and a shadowy matrix within its offspring.

I can't imagine readers who don't know the earlier novel making much of this one, which constantly refers back to characters whose destinies began or were finished in its predecessor, and which rely, consciously or not, on dense particulars vividly established in that excellent combination of internal and external adventure. It was rightly praised for its presentation of a ship and ship's company, but the sensuous and psychological concentration and precision are not repeated. You need to have a good memory or go back and read the first novel all over again. To recall or re-read is to recognize that the second novel is dependent, even parasitic, on the first. Perhaps this is its point, to be a reminder and a sign post.

Not only does it not do certain things again, but it lacks renewal of character and action. The narrator, Edmund Talbot, underwent a growth and change of heart in traditional fashion,

and like the Ancient Mariner, whom he doesn't really resemble, now tells his story in a slightly sadder, maybe wiser, way. In *Rites of Passage* there was a dual narration, Talbot's burden being shared by Colley, the humiliated person whose shocking death thrilled readers and converted Talbot. Colley was an intense and poetic writer, and with his death colour vanishes from the prose. We are left with the stiff and lumpy sentences of Talbot, whose lack of any mastery of the period's periodic style, intentional or not, deprives the language of a testing function. Stylistic imitation can be marvellously muted, as in Thackeray's *Henry Esmond*, or wonderfully idiosyncratic and strange, as in Joyce's *Ulysses*. In Golding's new novel it is half-hearted and flat.

This middle story sets out with an expressed anxiety of continuation, seeking a subject and having several imposed upon it. One is a genuine source of tension and pattern - the story of the ship's encumbrance of weed and the crew's dangerous efforts at extrication. Another is so superficial as to be puzzling - the love-story, or its beginning, in which repeated invocation of *le coup de foudre* only serves to stress the absence of any rendering of passion's thunder and lightning. Golding has always been better at doing the defects of loving than its satisfactions, and Talbot's amorous career, replacing with romantic desire what was bizarre isolated lust in the first novel, lacks all innerness. It may of course be a mere beginning, to be developed in the last part of the trilogy. We have to wait for this, too, in order to get the end of the ship's adventures, and comprehend Talbot's survival.

Absence is critically fashionable, so we must lament the story's unended ending, but it struck me as an experiment with the reader's response to a narrative exercise in narrative-teasing. To be obstructed in the act of critical complaint might have been more arresting.

Barbara Hardy

PAPER BACKS

There is an element of myth in most of the 16 stories in Adrienne Taylor's *He Rua Aroha - A Hundred Leaves of Love* (Penguin, £2.95), a first collection by a young New Zealand writer. They range from long stories about the natural world to brief sketches evoking the loneliness of a Maori boy in the city, dialogues between animals and a prose-poem about a children's game.

Writing in English, Taylor shows nostalgia for his Maori roots and his stories have, inevitably, a political dimension.

The Auckland writer Herman Charles Bosman (1909-1951), also

chose the medium of English to convey the dry humour of his narrator Oom Schalk Lourens, the setting of the Groote Maroek region and the atmosphere of prewar South Africa.

The stories edited and introduced by Stephen Gray in Makapuu's *Caves* (Penguin, £2.95) illustrate his skill as a raconteur, and his awareness of the contradictions underlying life in the backland.

Robin Buss

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BOOKS IN CLASS

Dated data

Computers and their Uses (GCSE Edition) £2.95 0 7131 7631 8. Computers and their Applications (blackline masters) £27. 0 7131 7324 6. By Bryan Weaver and Paul McGee. Edward Arnold

Computers and their User is a reworking of the authors' 1982 text, and at 73 pages for £2.95 it may seem churlish to criticize it. But for all that the cover proclaims "GCSE edition" and the preface stresses such GCSE concerns as analysing problems and investigating solutions, the main text still is not perceptibly different and has a very dated feel. Page 2 opens a section on peripherals with a section on card punches, including a half-page picture of a punched card. The next section moves on to paper tape. But how many GCSE Boards include punched media in their syllabuses?

Weaver and McGee continue with "optical systems" but that turns out to mean optical mark recognition (with a full page reproduction of a 1981 AEB examination form). Magnetic ink character recognition is the first mention of anything that could not feature in a computer museum; any mention of interactive computing is confined to a separate section, tacked on afterwards. It begins with teletypewriters, which are said to be "appropriate if the user wants a paper record of his conversation, which is the case in most educational uses of computers". So much for the age of the micro-computer.

The section on magnetic disc sounds as if it was written before the advent of the floppy disc, let alone the recent 3.5-inch disc. Indeed, I couldn't find a single mention of floppy discs either in the text or the index, let alone newer media such as optical disc. In fairness,

GCSE stresses underlying principles, not details of devices; but does that justify asking pupils who may not leave school until the 1990s to "explain how a paper tape punch differs from a data preparation paper tape punch"? Would not treatment of data protection issues be more relevant to most people?

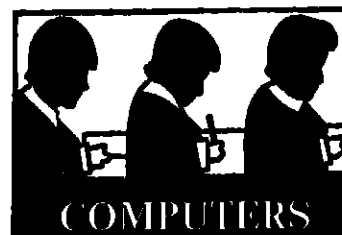
The collections of specimen GCSE examination questions may be useful source material and there are sections at the end on preparing for case study examinations, projects and activities. The book is cheap enough for a single copy for teacher reference to do no harm; but it cannot be recommended as a pupil text.

Price is a serious obstacle in the case of the "companion resource pack" of 42 blackline masters and a 12-page "Teacher's Guide". It isn't just the £27 price tag (about 50p a sheet) but also the fact that nearly all are designed to be written on, ie they're "consumable". Even large-scale photocopying is beyond the resources of many schools, who might prefer reusable work-cards for which pupils record answers in jotters. As with the book, the language level would sometimes defeat, or at least put off, GCSE students.

Furthermore, many of these worksheets present boring activities in a dreary way. In the computer age, what is the justification for asking pupils to copy employee information and pay from one worksheet to another (sheets 19 and 20)? Published in 1985 and reprinted in 1986, there is no sign that these sheets have been rewritten for the needs of GCSE candidates.

These publications point to a major problem. But they do not provide an adequate solution.

Jacquetta Megarry



COMPUTERS

Finding Out About Information Technology. Sponsored by British Telecom and Rank Xerox. CRAC Publications, Hobsons Limited £1.40. 086 021 902

Data Processing Foundation Skills. By A G Anderson. Pitman £4.95. 0273 02557 0

Business Information Processing. By David Harrison. Pitman £5.95. 0273 02440 X

Computer Literacy Skills in Practice. Student's book. By Graham Bishop and Fred Caswell. 007 084 889

Foundation courses

group work. The chapters include information on, for example, the need for digital transmission of data and a brief look at networks and shared data bases. It is largely left to the pupil to determine the full implications of the information given and additional reference material would be required to satisfy the requirements of examination courses. However, used as an appetizer, this could be a useful teaching aid.

Data Processing Foundation Skills is aimed at students in the 16 to 18-plus age range following YTS or BTEC National courses in Business Studies. It also covers the syllabus of RSA courses in Computers and Data Processing, and City and Guilds 748.

Throughout the book the text is lucid and the diagrams clear and informative. It begins by outlining the nature of data-processing and by explaining the elements of a data-processing system, goes on to detail the types of information required within business, the role of the computer and different processing techniques used in the commercial world. Solutions and/or specimen answers are provided for the exercises included in each chapter, but the reader is cautioned to attempt the tasks without before resorting to the text for answers.

Two case studies, one on an employment agency, the other on a car hire company, form the basis of the penultimate chapter and are used to consolidate the information contained in the preceding text. The final chapter contains a variety of supplementary information such as details on computer journals, how to get a job in data processing and a very comprehensive glossary.

Business Information Processing emphasizes the importance of information in business and the need to have accurate data available at all

times. Using a case study approach, it explores the various methods of handling information within a variety of business situations. The book covers much of the syllabus of GCSE Computer Studies, BTEC National and Information Processing modules. Its primary value lies in the way it problem-solving assignments, included in each chapter, develop information-handling skills.

It is often difficult for the reader to relate business situations to the day experience of the pupils and in this respect particularly, **Business Information Processing** could be a valuable aid. The case studies investigate common information-handling problems within business, such as stock control or production scheduling, and explain the concepts and processes with clarity and imagination.

Computer Literacy Skills in Practice attempts to give a general overview of computer technology while explaining in more detail some of the jargon in terms of current use in data-processing. It is aimed specifically at YTS and CPVE students who require a basic level of computer literacy rather than specialist knowledge. Accompanying the student's book is a teacher's manual and also containing assignments referred to at intervals in the book.

Compuser approach to computing, the explanations are clear, if somewhat basic at times, and are related to everyday possible to everyday situations such as cashpoints and retailing. YTS students, or others interested in obtaining a general understanding of how and why computers work, should find the book an easy-to-read learning aid.

Judith Dobbin

More computer reviews in the Extra, 49-50

Peripherals

Micro Computers in Adult Education. Edited by Stephen Bostock and Roger Selfert. Croom Helm £17.95. 0 709 93944 2

Microcomputer Software for Information Management. Edited by Mel Collier. Gower £15. 0 566 03555 3

Humanizing Technology. By Elizabeth Gerver. Plenum £15.60. 0 306 421410

The thread linking these three books is their common concern with how computers can be of use in non-mainstream education. Respectively (as not all the titles make clear) they look at adult and continuing education, libraries, community and adult education, and voluntary agencies. If teachers feel they have inadequate advice on how

micros can help them in their work, be assured that people in these other areas are far worse served. All these books are of value in their contexts.

Bostock and Selfert cover their field of adult and continuing education (which is admittedly a vast one) by bringing together papers from different authors. The authors look at different client groups, such as old people, women and medics, and each, in their way, do a pretty good job of introducing their views. The papers cannot rely on more than introductions in such a book, however, and it seems to have been decided that to concentrate impact, if not readers' minds, a highly condensed, heavily annotated style is better than an anecdotal cheerful one. The resulting dreariness is not helped by a stark cramped typeface, a shortage of white space and a lack of illustrations. It is not at all clear who is expected to buy this book, useful as it is for reference.

Elizabeth Gerver, author of *Humanizing Technology*, works in Scotland; her book is expensive, because being published in America. Gerver, raising the issue of a fair number of client groups, and does with some excellent case studies, a few thoughts for the future, three appendices, an enormous reading list, and an equally enormous index.

Mel Collier's *Microcomputer Software for Information Management* consists of six lengthy case studies, the accounts of different types of computer usage in libraries. These are *dBase II* for local information management; library automation; and the production of on-demand bibliographies. Not only will school and college librarians find much food for thought in these pages, but teachers of IT, business studies and computing will appreciate the relevance of those real-life applications.

Eric Deacon

CHILDREN'S LITERATURE

In Between Times. By Hannah Cole. Julia MacRae £5.95. 0 86203 295 4

Battleground. By Richard Potts. Hodder & Stoughton £5.95. 0 340 39370 X

Ghost Dog. By Dick Cate. Corgi £7.95. 0 575 03924 4

resents having to share her attention. Trust Stacey and Karen to rescue him with a little help from a boat, a tonification, and hospital with a handy need for his particular talent. If the ending is a little too pat, there are plenty of compensations - a brisk, wryly humorous narrative that manages to take a positive view of changes in our society without appearing to preach. It's Hannah Cole's first full-length book but won't be her last, I hope.

Richard Potts on the other hand has 20 years of authorship to draw on. This doesn't always work in his favour. The first half of *Battleground* plots the rivalry between Ben and his elder brother, takes up with the local hard-core Barry Minton. This, and Ben's meeting with Tod - a character from a previous Richard Potts' book - is convincingly described, but in prose so routine it's hard to believe the author's attention is fully engaged. Then, halfway through, the book comes alive. Ben's first fishing trip hooks us as well as him, and suddenly the territory where both partnerships have set up camp is worth fighting for, not to mention reading about. Moral? The best bait for a bookworm is the writer's own enthusiasm.

In Hannah Cole's *In Between Times* the friendship between Karen and Stacey is relatively straightforward - differences between them are disclosed by what they have in common. To fill in the time when they're being minded by warm-hearted but mischievous Mrs. Chisley. The problem is her son Timothy who

In a Northern community that's proud of both unemployment and a myopic, marauding creature. Here there's none of the Howker bite or metaphorical power yet also none of the consolation of audience. Cate knows exactly what he's doing. It's *Kids Like Elvis* and *Butch* who are Billy's mates in the story. Billy himself is both as much by his sister's marriage problems as he is by the dog, and the book is on top form when there's a going on - in the family home especially - but also in the streets and playgrounds and classrooms Cate knows so well. In between the talk, the author's voice is less secure.

Mind you, a writer can be too secure. In *The Blossoms* and *The Green Dragon*, Betsy Byars is coasting. Her third book about Junior and Vera, *Grandpa*, rodeo-riding Mum and the dog, merely confirms their status as a family that's Not Just Anything. There's no further development. The tale of how everyone rallies round Junior and his Unidentifiable Object never really achieves anything. Yet even here Betsy Byars does just enough to show she's better than anyone at depicting the full range of children's feeling for each other. To swap the single some where Maggie and her would-be-boyfriend Richard kisses in the tree for the rest of the book.

Chris Powling

Self-criticism

Assessing English: Helping Students to Reflect on Their Work. By Brian Johnston. Open University Press £7.95. 0 335 159990

The premise of this book is elegantly simple and, when it is pointed out, disturbingly obvious. It is that classroom writing can only be an educative process if the writer reflects upon what is written and makes judgements about it. And, of course, this is precisely what does not happen in so many English lessons. Rather, the writer turns out something quite shallow and immediate which is then reflected upon by the teacher. It is the teacher who learns and makes the judgements and then awards a grade and a one line comment.

"When asked, 'What did you learn from doing that writing?' or 'What were you experimenting with?' students are often confused. The questions make little sense to them."

From this starting point, the author conducted a research programme with teachers, involving to discover and try out ways of involving school students in the assessment of their own work in English. The book describes all of this in great detail, with much direct transcription of classroom work and conversation. The chapter "Helping Students to Assess their Own Written Products", for example, describes how a teacher guides a senior secondary school group into the putting together of some criteria for the judgement of writing, going on to encourage them to hand in, with each piece of work, a brief preamble about its nature and the processes involved in its creation.

There is absolutely no doubt about the potential value of this book to English teachers. Given that it is written from Australian experience where perhaps grade-consciousness may sometimes be more of a plague than it is here, it is still true to say that English teachers at all levels need practical help if they are to get away from the treadmill of marking and giving grades to no obvious pedagogic purpose. Teachers grappling with the problems of GCSE assessment may find Johnston's book particularly useful, but it has something to say to teachers of all age groups.

Gerald Haigh

Tall tales

The Adventures of Baron Munchausen. By R R Raspe. Introduction by J. Catswell. Drawings by Ronald Searle. Methuen £6.95. 0 413 14000 8

The mere mention of Munchausen is to amateurs of tall stories, an irresistible invitation to laughter.

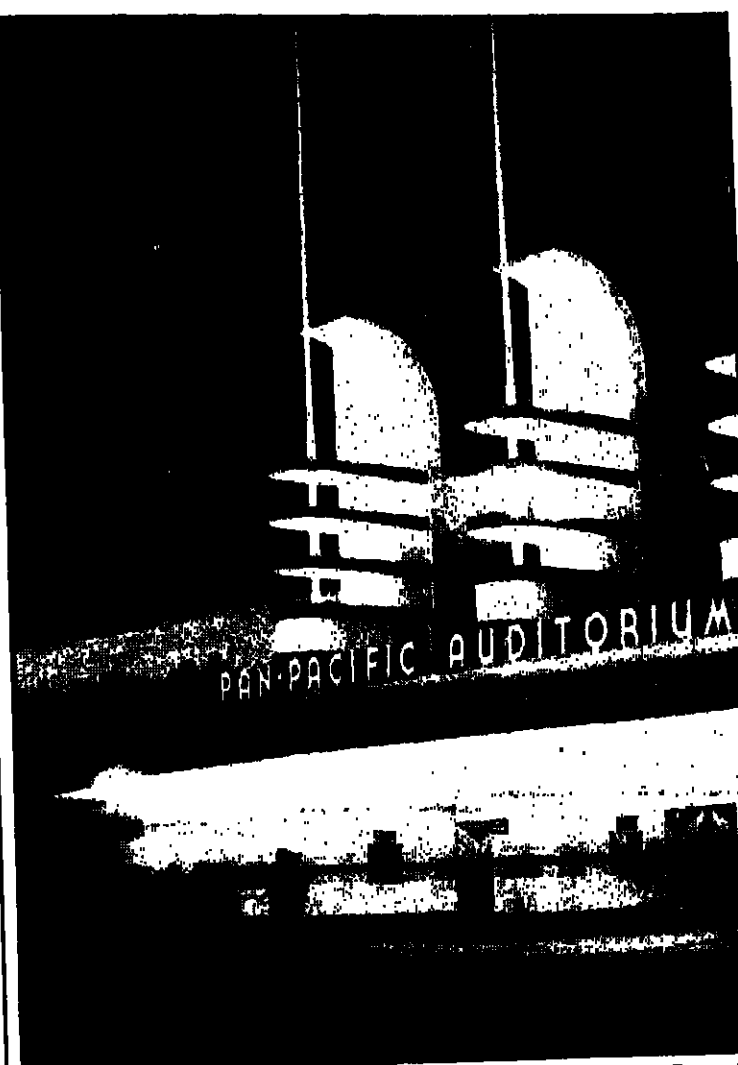
This scholarly edition has a long introduction giving biographical information about the author, Raspe, and a history of the work itself in its 200 years or so of existence. A bibliography of the major editions rounds this off. It comes as a surprise to discover that the original work does not contain what many of the adventures which have the apparently undoubted stamp of authenticity. One is the catching of the ducks with a fishing line hanging from a bridge.

The stories here collected in the first sections are genuine Raspe. In the remaining section his is no longer the hand that wrote a thousand lies. Yet these sections are amusing, none the less. The drawings by Ronald Searle will delight some and displease others. The dog, merely confirms their status as a family that's Not Just Anything. There's no further development. The tale of how everyone rallies round Junior and his Unidentifiable Object never really achieves anything. Yet even here Betsy Byars does just enough to show she's better than anyone at depicting the full range of children's feeling for each other. To swap the single some where Maggie and her would-be-boyfriend Richard kisses in the tree for the rest of the book.

Be that as it may, this charming book will delight the many for whom the Baron is a boon companion in lighter moods and a source of amusement in darker ones. It is a book to be read only about Hemingway.

John and Pierre Walter

BOOKS



When the Pan-Pacific Auditorium was built in 1935, it was all the Streamline Moderne facade actually fronted a very ordinary building. This photo is taken from Sam Hail Kaplan's *LA Lost and Found* (Viking £25.00), in which the development of the buildings and vistas of this magical city is chronicled through eight hectic decades

Wolfe tome

Look Homeward: A Life of Thomas Wolfe. By David Herbert Donald. Bloomsbury £16.95. 0 7475 0004 5

At Harvard, turning his face the wrong way, Thomas Wolfe opted for a playwright's course, and when exhorting to cut out undeveloped sub-plots reposted by adding material to strengthen them instead. No one was so profuse, torrential or loquacious as Thomas Wolfe, and never was a writer less suited to playwrighting. Quite obviously, fiction, the literary hold-all, was the form for him, if form there was from his destiny in order, on the recall, to embrace it the more wholeheartedly? He was soon, ineluctably, caught up in the toils of novel-making.

The biographer himself doesn't put this interpretation on the facts, and it is no doubt just this kind of glib psychology that in his preface he pledges himself to eschew. Yet in this stupendously detailed yet succinct and ordered biography the psychological pattern emerges, if not loud, then certainly neat and clear. Wolfe's father was a wayward, unreliable near-alcoholic and his mother, living apart, kept a boarding house. Thomas, the youngest of seven, slept in her bed till he was eight years old, her appendage.

What more natural than that in later life he was always to attach himself to older, stronger and wiser persons from whom he could learn - with fine results when that person was the famous editor Maxwell Perkins? Wolfe didn't write sequential narratives; but it was Perkins, selecting and coaxing, cutting and arranging, who found a structure for him.

There were less successful results when the person became a lover. Hemingway, another from Perkins' stable, got it all wrong when he diagnosed Wolfe's failure, for a while, to produce a second novel as due to "insufficient bed-sports". More significant, though the biographer signals from pointing it up, is the image of Wolfe silent for an hour before the giant redwood trees in the Sequoia National Park, finding them, according to his companion, "the most satisfying thing he had ever seen in nature". Praple excesses were the order of many of Wolfe's days, and the Hemingway-Hemingway was the only about Hemingway.

Monty Halpern

Guardian angels

Women Talking - An Anthology from The Guardian Women's Page 1922-35 and 1957-71. Edited by Mary Stott. Pandora Press £5.95. 0 86358 087 4

Mary Stott cried when her editor told her to take over the women's page of the *Leicester Mail*. The year was 1926 and Mary Stott was just 19, a fledgling journalist who viewed the women's page as a prison from which she would never escape. In one way she was right. For the next five decades she spent only five years in "proper journalism", as a sub-editor of news. Otherwise this bookworm with no interest in fashion, food, family or furnishing was always engaged in some form of women's journalism and for 14 years was editor of the women's page of the *Manchester Guardian*.

Where Mary Stott was wrong was to see the women's page as a prison since for her it turned out to be the foundation of a distinguished career. Her days at the *Guardian*, from 1957 to early 1972, coincided with a time of rapid change in women's lives, change which her pages reflected. Articles on everything from hitch-hiking to housework to Helen Gurley Brown's *Sex and the Single Girl*, rightly brought the pages a reputation for being well written and lively as well as provocative.

This book is an anthology of the best of that writing, interspersed with articles from the period 1922-1935. Mary Stott's reason for this is that the two periods can be usefully compared: it took until the late Twenties for women of 21 to secure the right to vote, while in the Sixties women were arguing for the Sex Discrimination Act.

Other causes in the Twenties, such as poverty, equality, or the likelihood of war are still with us. We learn of the desperately hard lives of working-class women in 1926; for one bricklayer's wife the birth of a new baby was the only excuse there ever was to take a week off work. We learn from Winifred Holtby in 1926 and Jill

Tweedie in 1971 about the humiliations suffered in hotels by women who travel without men. We learn of Vera Brittain's fears of a Second World War in the open letter she wrote to her son in 1934. Some of the articles are about less momentous worries such as whether hemlines should be worn high or low or how to make a sleepless baby sleep. One of the funniest articles reveals the tactics Margaret Drabble used to induce drowsiness in her infant: several rounds of "Ten Green Bottles" sung while crouched on all fours, followed by a careful, quiet retreat through the door, still on all fours.

Like any good anthology, this is an easy book to dip into. I found that to read it was like reading the women's magazine I've often dreamed about but which doesn't exist: a magazine for women who want to read intelligent articles on subjects as diverse as parliamentary reform or the value, in winter, of wearing a vest. In fact the book makes strong by example the case for serious daily newspapers to include a women's page. Many female readers of quality papers don't find women's magazines satisfying and yet their interests are not well served by the main news and features desks of newspapers. Nor are women writers well served with space, even today. One interesting point about the *Guardian* women's page in its heyday was the high quality of the contributions by readers who were not professional journalists.

Mary Stott's collection illustrates the wit and wisdom of many women writers, some of whose work might never have been published or even written without her inspiration. She probably doesn't realize it but her book, as well as being a useful record of ephemeral writing, is also an excellent tribute to the editorial and journalistic skills she has shown in her own long and continuing career.

Jennifer McKay

THE TIMES



Setting course

Oxbridge, red brick, or plate glass? As school leavers face the choice that will shape the rest of their lives, *The Times* publishes, all next week, a unique guide to every university and polytechnic in the country. What they offer, what they are best - and worst - at, and how to handle life on a grant



and regularly in *The Times*, Bernard Levin on the way we live now, John Clare on education, Jane MacQuitty on wine, Peter Ackroyd on books, Barbara Amiel's viewpoint, Paul Griffiths on music, Phillip Howard on words, the humour of Mel Calman and Barry Fantoni, John Higgins at the opera, David Robinson on the cinema, David Sinclair on rock, the unique *Times* crossword... and much more.

THE TIMES

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Sex and friendship

Nick Baker previews a drama about Aids

SCHOOLS TELEVISION
Aids
ITV Schools, June 22 and 29, 10.26am.

What facts do you need before you take Aids seriously? yells the graffiti in Yorkshire Television's new 15 minute drama documentary for 16-plus. It's really a rhetorical question for producers David Wilson and Sally Wells, who talk about the problem of "dumping facts on people", and the difficulty of dealing with this most sensitive subject in the wake of a tidal wave of Aids facts, information and discussion earlier in the year.

It was their decision, armed with expert advice, to answer the plea from Yorkshire TV's panel of education officers and advisers for material for the over 16s with a film drama rather than a documentary. In fact, it turns out to be something between the two - a documentary approach in which actors speak their lines direct to camera. Their belief is that factual documentary is less effective than something dramatic. Young people will watch Grange Hill but are less likely to be interested in a documentary about comprehensive schools.

So the film, simply entitled *Aids*, includes no white coated experts in laboratories, no microscope slides of the offending virus, or graphs of projected death figures. Instead, it depicts the sexual history - and just as importantly the personalities - of Julie and Lenny, both of whom, it's implied, have independently caught Aids through heterosexual contact.

Both characters talk alone to camera, and the film also shows glimpses of the way the disease affects them. One glimpse is of a disturbingly authentic epileptic fit.

Accounts of Julie and Lenny's characters come via descriptions from their friends and workmates, who are themselves depicted as positive characters in control of their lives. Lenny and Julie too have exercised control, in other directions. Lenny is a hi fi whizz, Julie a musician. The irony is that they've failed to exercise the same degree of control over their sex lives, a



fact they both confess to the viewer. "Well, I did go with a lad once who reckoned to know what it was all about - it was more funny than anything else", Julie tells us, reluctantly. She goes on, more honestly, to say that she preferred petting: "you know, playing with each other", thus underlining the message that this sort of sexual activity is a satisfactory way of expressing physical affection.

Similarly, Lenny says that he'd "done it a couple of times - sort of - once with an older girl", implying that it's possible to be infected through a small number of casual partners, one of whom may have been a prostitute. The latter suggestion is subtly faint, allowing teachers to pick it up in discussion if they feel it's appropriate.

There are, in fact, messages and discussion stimuli embedded at varying depths throughout the film, and many are helpfully outlined in the introductory notes and annotated script, already supplied to all secondary schools. One emphatic and recurring message is about control over one's personal life, using the same degree of competence to make decisions as one would concerning careers or leisure activity.

Thus a lonely youth, his heroin syringe on the table in front of him, tells us about his increasingly solitary

life. The syringe is a big hint, but the annotation to the script also warns about how Aids can affect the attitudes of people like doctors and insurers, and goes on to suggest discussion about young people's own attitudes to those with the antibodies and disease.

Similarly, an overconfident young man diffuses through a girlie magazine: "Me - I know all about it - you see you don't have to do it to know about it... do you?" A parody of the victim of adolescent peer pressure perhaps, but an excellent way to start a discussion about young men's attitudes to those with the antibodies and disease.

There are aspects of the film which will need careful handling, especially the implicit endorsement of non penetrative sex as a safer option. In another scene, a girl tells us, quite straightforwardly, that she carries condoms. A graphically realistic animated sequence showing the correct way to put a condom on was filmed, but the IBA ordered it to be taken out, despite the fact that Yorkshire Television had decided that the technique of animation used, sketchily tracing the sequence from actual photographic images, was a sensitive way of achieving accuracy without being too realistic.

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but at the same time avoiding the inadvertently comic effect that the use of condoms on scale models and sauce bottles had in the Aids Week programmes. However, the IBA's verdict was that the sequence was "unnecessary".

The film ends reassuringly, with a young Aids counsellor. Her straightforward commentary is punctuated by captions to form the most "factual" element of the film.

Producer David Wilson explains that the absence of reference to high risk groups is a deliberate way of appealing to the majority of young people. To stress the risks of homosexuality and intravenous drug use would distance the problem from most teenagers' personal experience.

Both producers are keen to emphasize that Aids can indirectly or directly affect everyone, but that fear is as negative as ignorance; hence the reassuring ending. In line with current Health Education Authority thinking, Wilson stresses that people "mustn't be put off the need to form relationships - otherwise you could be put off friendship as well as sex".

Aids certainly covers a lot of ground in 15 minutes, some of which will reinforce "pre-Aids" sex education messages. Its explicitness and its density makes pre-viewing a must for teachers, particularly those who are considering it for use with the under-16s, although it's been made specifically for the 16-plus age range. To its enormous credit, the film leaves a good deal to the teachers, and is flexible enough for them to make the hard decisions about what to discuss and what to leave out.

Inevitably, despite endorsement from the highest levels in both TV and education - a few people will carp at what they interpret as the absence of the moral framework baldly demanded by the 1986 Education Act. However, both producers agree that the responsibility not to pass on Aids is itself a moral imperative.

"We've maximized the opportunities for teachers to deal with the moral dimension", adds co-producer Sally Wells. Judging by the annotated script, she's right. For example, Lenny's account of his pitifully short sex life is accompanied by the note: "Casual sex increases the risks... Discuss whether it's ever a risk worth taking."

OFF AIR

CHANNEL 4's agreement to transmit ITV schools programmes will only last five years, leaving independent executives to decide what to do with the broadcasts in 1992. By that time, the possibility of night time broadcasting schools TV for video recording will have diminished, as mainstream night programming will probably have grown. In any event, there are still a fair number of small primaries without their own video recorder.

One suggestion, in a letter from the Director of Television, David Cross, quoted in *Broadcast* magazine, that ITV Schools programmes might be carried in the 1990s by DBS - Direct Broadcasting by Satellite. Co-incidentally, in a speech celebrating 30 years of adult educational TV in Northern Ireland, Dr R B Henderson, chairman of Ulster TV, called for educational TV to have a place in satellite broadcasting, asking for government help for schools to buy receiving dishes.

Hardware to receive satellite TV currently costs well over £500. On the other hand, there are far cheaper, ad assembly models on the market, as some schools have started making their own from scratch as part of science projects. First, find an electronic teacher, might be a guiding principle here.



MUCH SYMPATHY from the BBC about the absence of teachers' notes for its term's A level German series. They explain that new policy on language programmes means that the film screening is to be regarded as a preview.

The idea is that the notes are compiled by a panel of teachers on the basis of practical classroom use of the programme's first transmission. Notes are then made available for subsequent transmissions. In the case of the German programmes, it's expected that there will be at least four chances to see or record them. The next comes in January of next year.

The BBC agrees that ideally the programmes should be piloted and backed by notes before their first showing, but shortage of editing and long print deadlines make this impossible. Hitherto, some modern language programmes were being kept on the shelf for as long as a year while notes were being prepared. Now the BBC prefers to show them fresh from the cutting room, with a free transcript available to teachers while they wait for the notes.

THIS YEAR'S British Film Institute Summer School will look at the relationship between children and television. Under the title *In Front of the Children* it is to be held at the University of Stirling between July 25 and 31. Questions to be discussed will include how the broadcasters see audiences of children; where the responsibilities of broadcasters, parents and politicians lie; and which local authorities will regard the subject of TV and children as important enough to giving up the £130 course fee to send a representative. Early application is advised.

It's understood that the setting up of a British version of the American campaign group ACT (Action for Children's Television) as featured in *The Times* on February 20. The American ACT is a well-organized group which encourages parents, teachers and children to have a hard look at television and lobbies the industry to take positive action on things like merchandising related TV cartoons, which have already started to arrive on British screens.

For more details about the British Summer School, write to Summer School, Education Department, BBC, 100, Dean Street, London W1V 6AA. Nick Baker

Richmond on-the-Rhine

SCHOOLS TELEVISION
Advanced Level Studies German
BBC 2, Mondays, 12 noon; to be rerun April 29 to May 27, 1988.

Television can be an excellent medium for foreign language teaching, particularly at the more advanced stages, where small groups benefit enormously. So suitable programmes for this level are welcomed by all teachers with the resources available to exploit them - and exploit them they must, since they cannot simply be viewed and then left.

These five programmes, each 20 minutes long, are aimed at the 16 to 19 age range and are designed "for comprehension and classroom discussion". The material is all in German, and teachers' notes and available (alas, and that is a very loud "alas", they were not ready for the first run, from April to June).

So far, then, nothing particularly striking about when you view the programmes, several features immediately stand out: the format is a mixture of film-documentary and studio discussion; the participants are young people from Germany and Austria; the film locations are Vienna and East Berlin; and the topics chosen have some appeal to young people.

First, the presentation is unusual. We often see voice-over documentary-style programmes, but rarely do we have German-speaking young people discussing the issues raised in the film, thereby bringing out all the important

themes in a natural way. Second, these teenagers, from the Deutsche Schule, Richmond, and the Bundesrealgymnasium, Mürzzuschlag, Austria, present a good model for discussion in German, as the language is natural with a variety of accents (some rather hinder comprehension but, after all, people do speak like that) and the pupils differ in their opinions.

Third, the emphasis on Austria and East Berlin departs from the standard "German scene", giving pupils an insight into other German-speaking areas of real interest, particularly as these films look at young people there.

The topics are at first sight, perhaps, a little strange: "Body Building in Austria", "Unemployment", "An Austrian School Leaver", "East Berlin", and "East-West Divide". But if these programmes are intended for comprehension and discussion, the first objective is certainly fulfilled, as there is a variety of German, and lots of it. The second can be achieved, if you consider the possibilities for follow-up discussions on sport and hobbies, pollution and ecology, atomic power, personal aims, male and female roles, East-West relations, and youth in Germany.

Criticism? The studio discussions can seem static and do present problems for comprehension, given the articulation of some participants. But, with the teachers' notes, with preparation and exploitation, I am sure A level pupils will find much to enjoy, and learn from the programmes.

Colin Russell

Neck and neck

CHILDREN'S TELEVISION
Face the Kids
Channel 4, May 29 and June 12.
Newsround Extra Election
BBC1, June 12.

In *Face the Kids* young interviewers were set loose on senior politicians. The Alliance leaders had a fairly torrid time. What does David Steel feel when *Spitting Image* portrays him as being in David Owen's pocket? In the event of a hung Parliament, Owen would lean towards Mrs Thatcher, wouldn't he? The question was asked in such a way that the denial seemed futile. The young lady who asked it will go far. She was singularly unimpressed by the answers.

The Labour leader had the easiest time. He was on sure ground with two youngsters who had just returned from a visit to a high unemployment Rhonda council estate. He talked and talked. Mrs Thatcher was to blame for everything, including the Anglesy weather. They liked him, but, like children who did not know how to interrupt his flow.

Two young Americans asked Mrs Thatcher penetrating questions with an air of innocence. An enquiry about what happened to children who were born into poverty brought a description of the benefits system. How should the government deal with children who turn to crime? Mrs Thatcher said it was a great worry. Being a Prime Minister and another was similar in that both involved good housekeeping and managing on a limited budget. Mrs Thatcher

could scarcely conceal her delight when one of the interviewers said that she had been Prime Minister for so long as he could remember.

All the politicians seemed aware that this was different and that the usual gamesmanship was inappropriate. Mr Kinnoch seemed completely at home. David Steel seemed weary. David Owen was a little uncertain. Mrs Thatcher will rarely face more difficult questions. The interviewers will have learned that young people's concerns and the issues as defined by politicians coincide only in part. They will also have learned that politicians don't have to answer the questions.

The results of John Craven's *Newsround Extra Election* are by now well known and will not have done a great deal to take the gloss off the Prime Minister's triumph. The final result saw Tory and Labour neck and neck with the Alliance holding the balance of power. As an exercise it was a contentious success. Nearly a quarter of a million pupils in 471 schools in 460 constituencies took part in mock elections. The mood was serious. Unemployment was an issue everywhere. In the fore: Pupil volunteers staged the BBC *Newsround* office and handled the incoming results. If participation is a key to effective learning, then this was it on a large scale.

Thousands of youngsters will now have a greater understanding of the electoral process. So they should. Elections are, after all, the most exciting part of the political process. Realities are on trial and there are interest for the next five years. The Anglesy traffic warden who could not bring himself to exercise a political discretion on duty. "We are not allowed to say anything," he said. Gorman Stafford

Nick Baker

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Required for September or as soon as possible, an enthusiastic teacher to join the team working in the 180 place nursery. Candidate should be interested in collaborative teaching. An ability to speak Punjabi, Gujarati and Urdu would be an advantage. Scale 1. 100066

BRADFORD
CITY OF BRADFORD METROPOLITAN COUNCIL
FIRST SCHOOL
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Primary and Nursery Teachers

The LEA is the county's only single purpose education authority. Our aim is to provide a high quality education service to the ethnically diverse population of Inner London. This gives rise to excellent opportunities for high quality Scale 1 primary and nursery teachers to work in an exciting educational environment and promote equality of opportunity for all our children. Permanent and temporary posts are available in all divisions.

The LEA provides an education service for a multi-racial area and employees of Black and other ethnic minority communities are under-represented in nursery and primary teaching posts. We therefore welcome applications from members of these groups. Race Relations Act 1976 exemption section 58(b)(1).

The LEA offers an employment package that is second to none:

- Excellent pupil/teacher ratios.
- High levels of school support staff.
- Excellent professional back-up, plus a wide range of central specialist resources.
- Multi-purpose teacher centres.
- Divisionally based inspectors and a advisory teacher support.
- High level of in-service training.
- Excellent progression prospects.
- Inner London allowance of £1,215 in addition to Barnham salary.
- Job share opportunities for experienced teachers.

Further information and application forms are available from: LEA, PER/PSA, Room 67, The County Hall, London EC1M 7PS, or telephone 01-493 8261 (9.30am-5.00pm, Mon-Fri). Alternatively, if you are keen to work in a specific geographic area, please telephone the Teaching Staff Section for the appropriate LEA Division.

Supply Teachers

Opportunities also available at a daily rate of between £30.90 and £38.92 (plus £2.40 London allowance).

Further information and an application form can be obtained by telephoning the Teaching Staff Section for the division in which you wish to work.

Please apply to your application form with your CV and application form.

ilea Working in Education

HAMMERSMITH & KENSINGTON 01-493 3388
CAMDEN & WESTMINSTER 01-493 8180
ISLINGTON 01-272 7727
HACKNEY 01-493 3777
CITY & TOWER HAMLETS 01-769 1288
GREENWICH 01-893 3161
LEWISHAM 01-769 4633
SOUTH WARK 01-769 8866
LAMBETH 01-274 8228
WANDSWORTH 01-774 1282

Inner London Education Authority

ilea IS AN EQUAL OPPORTUNITY EMPLOYER

Wiltshire

PRIMARY EDUCATION

HEADTEACHER POST

Chilmark C.E. (Aided) First School
The Street, Chilmark, Salisbury SP5 8AR
Group 1 N.O.R. 20

A Head Teacher is required for this two teacher school from January 1988, following the retirement of Mr. C. J. Penny and the completion of a review by the Education Committee of primary school provision in the area.

Chilmark is a very attractive village set in pleasant country some 12 miles west of Salisbury.
Candidates should be committed Christians in sympathy with the aims of a Church School.

Application form and further details (SAE please) from and returnable to the Chief Education Officer, Education Department (Ref. ST/TPN8), Trowbridge, BA14 8JB by 29th June 1987.

SCALE 1 POSTS

Upduns Special School
Leigh Road, Penhill, Swindon SN2 8DE

Teacher required from 1st September, 1987 for this temporary one year post which could be made permanent. Post is for pupils for severe learning difficulties. Written letter of application to be sent to the Head Teacher, stating age and giving particulars of education, experience and names and addresses of 2 referees by 3rd July 1987.

Warminster Primary School
Princetown Lane, Warminster, BA12 8NT
Group N.O.R. 154

Required for academic year 1987/88 an enthusiastic and versatile teacher for Lower Juniors in this semi-open plan school. A sense of humour an advantage. Written letter of application stating age, giving particulars of education, training, experience, and stating special interests and skills and also the names and addresses of two referees to be sent to the Head Teacher by the 29th June or earlier if you wish. (SAE please).

Studley Green C.P. School
Westfield Road, Trowbridge, BA14 9JQ
Group 8 N.O.R. 220

Temporary Teacher Scale 1 Plus SSA for 1 Year

Teacher with a minimum of 3 years Reception experience, required to teach a small class of Language Disordered Children. Knowledge of, or experience with, children with Special Needs could prove to be an advantage. Candidates must be prepared to work in a team situation with the School's Speech Therapist and a Language Unit Leader. The successful candidate must be enthusiastic and be prepared to give time out of school to discuss individual work programmes with colleagues and to attend the appropriate courses. There is a possibility of the post becoming permanent.

Application forms and further details (SAE please) available from the Head Teacher, Mr. R. J. Ling, Studley Green Primary School, Westfield Road, Trowbridge BA14 9JQ. The closing date is 3rd July 1987.

The Grove County Primary School
Hazel Grove, Trowbridge, BA14 9JG, Trow 5242
Group 8 N.O.R. 289

Required for September 1987 a permanent Scale 1 teacher initially for a class of children within the 6-8 year age range. Candidates with Musical talent are particularly sought. Potential candidates are welcome to visit the school where further details are available.

Application is by form (SAE please) with accompanying letter, which should state areas of curriculum strength, returnable by the 3rd July 1987.

The Grove C.P. School
Hazel Grove, Trowbridge, BA14 9JG, Trow 5242
Group 5 N.O.R. 289

Required for September 1987, a permanent Scale 1 Teacher initially for a class of children within the 6-8 year age range. Interest in problem solving, COT and/or Computers would be an advantage.

Potential candidates are welcome to visit the school, where further details of this position are available. Application is by form (SAE please) with an accompanying letter which should state areas of curriculum strengths, returnable by the 3rd July 1987.

Toothill Primary School
Stokeley Drive, Swindon, SN5 8DR
Acting Head Teacher: Mr. R. Jackson
Estimated January 1988 N.O.R. 480

Required from September 1987, an enthusiastic permanent Scale 1 Teacher.

When applying, candidates should specify their curriculum interests and age ranges previously taught.

Letter of application, C.V., and names and addresses of two referees to the Acting Head Teacher no later than 26th June 1987.

Eldene Junior School
Collingwood, Eldene, Swindon, SN5 1TG
Head Teacher: Mrs. M. Eldridge
Estimated N.O.R. January 1988 - 247

Required from September or January, a Scale 1/5 teacher to support children with Special Needs in a Junior School.

Applications are invited from enthusiastic, sympathetic teachers to implement a practical curriculum based on first hand experience. The person appointed will be responsible for a small number of children with moderate learning difficulties.

Application forms and further details from the Head Teacher at the school (addressed envelope please). Closing date 29th June 1987.

Oliver Tomkins O.E. of Junior School
Beaumont Road, Swindon, SN5 8LW
Head Teacher: Mrs. A. J. Barrett
Estimated January 1988 N.O.R. 314

Required from September 1987, a permanent Scale 1 Teacher for this aided Junior School.

Letter of application, which should include particular interests and qualifications, C.V., and names and addresses of two referees to the Head Teacher at the school no later than 24th June 1987.

SPECIAL EDUCATION

AREA SUPPORT TEAM LEADER (SCALE 1)

Required for January 1988, a Leader for the Central Area Support Team upon the promotion of the present postholder to an Advisory post with another authority. The Team Leader is responsible for leading and co-ordinating a team of teachers which provides Special Needs support (no school) by means of visits, mainly in the primary sector and will be based in Trowbridge. Home visits and the Area's unattached staff will be part of the team.

Application forms and further details (SAE please) from and returnable to the Chief Education Officer (Ref. ST/TPN8), County Hall, Trowbridge, by 29th June 1987.

PRIMARY HEADSHIPS

CAMBRIDGESHIRE

(EQUAL OPPORTUNITY EMPLOYER)

BEAUFRE COMMUNITY
PRIMARY SCHOOL
Church Drive, Outwell,
Witcham, Cambs.

Required for January 1988:

HEAD TEACHER Group 3 plus Community Allowance.

Further details and an application form available from the Senior Area Education Officer, Education Office, Tenthill Close, City Road, Peterborough PE1 1JU (s.a.e.). Closing date 10th July 1987. (40858)

110010

DORSET

DURWESTON CE (AIDED)

First School

Durweston, Blandford

(Group 1)

HEAD TEACHER

Required for January 1988.

Application forms, returnable to the Education Officer, Dorset Education Office, Dorchester DT1 1XJ (enclosed s.a.e.). (40858)

110010

EAST SUSSEX

POLLEATS CP SCHOOL

Oakton Drive, Polegate BN26 6PT

Applications are invited for this Group 4 Headship for appointment from January 1, 1988.

Relocation grants in approved cases.

Application forms and further details (SAE please) available from the County Education Officer, PO Box 61, County Hall, Preston, PR1 8JL.

Closing date: July 1987. (40847)

110010

EAST SUSSEX

WEST HOVE INFANTS

Portland Road, Hove BN3 5JA

Applications are invited for this Group 4 Headship for appointment from January 1, 1988.

Relocation grants in approved cases.

Application forms (SAE please) available from the County Education Officer, PO Box 61, County Hall, Preston, PR1 8JL.

Closing date: July 1987. (40847)

110010

HAMPSHIRE

RINGWOOD C.E.

CONTROLLED INFANT SCHOOL

School Lane, Ringwood, Hants N.O.R. 140 APPROX.

HEADTEACHER

Group 4 School

Required January 1988.

S.A.E. (P) to South West Hants Area Education Office, Cannon Street, Lymington, Hants SO41 2BH, for application form and further details.

Closing date 3rd July 1987.

The County Council pursues a policy of equality of opportunity. Applications particularly welcome from people with disabilities. (40858)

110010

HAMPSHIRE

MONK SHERBORNE

COUNTY PRIMARY SCHOOL

Charter Alley, Ramsall, Basingstoke, Hants. RG24 8RS

HEADTEACHER - Group 2

Required January 1988.

S.A.E. for application form/ further details from Area Education Office, Sun Alliance House, 41 White Street, Basingstoke, Hants RG24 1LU.

Closing date for completed applications 30th June 1987.

The County Council pursues a policy of equality of opportunity. Applications particularly welcome from people with disabilities. (40858)

110010

HAMPSHIRE

KINGCLERE C.E. (CONT.)

PRIMARY SCHOOL

14b Grove, Kingclere, Newbury RG16 8RF

Required January 1988.

S.A.E. for application form/ further details from Area Education Office, Sun Alliance House, 41 White Street, Basingstoke, Hants RG24 1LU.

Closing date for completed applications 3rd July 1987.

The County Council pursues a policy of equality of opportunity. Applications particularly welcome from people with disabilities. (40858)

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KINGCLERE C.E. (CONT.)

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Required January 1988.

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Closing date for completed applications 3rd July 1987.



SURREY COUNTY COUNCIL

* FRINGE AREA LONDON ALLOWANCE £309 p.a. throughout the County.
* Temporary housing may be available.
* Generous relocation expenses in approved cases.

DEPUTY HEADSHIPS

GOODWYNS COUNTY MIDDLE SCHOOL

Goodwyns Road, Dorking, RH4 2LR

Tel: Dorking 884506. NOR January 1987, 143.

DEPUTY HEADTEACHER required for January 1988, or earlier, for this Group 4 County Middle School for pupils aged 8-12 years. The appointment will be made to a permanent Group 3 post, but will temporarily at Group 4 level to be reviewed in April 1988. Applicants should be committed to a traumatic thematic approach to the curriculum.

Salary Scale £12,126 - £13,500 pa (entering salary).

TADWORTH COUNTY FIRST & MIDDLE SCHOOL

Tadworth Street, Tadworth, Surrey, KT20 5RR

Tel: Burgh Heath 354541. NOR January 1987, 336.

DEPUTY HEADTEACHER required for January 1988 for this Group 5 County First & Middle School for pupils aged 5-12 years.

Salary Scale £12,843 - £14,112 pa

Application form and further details from South East Area Office, 123 Blackheath Road, Regent, RH2 7DD.

Tel: Redhill 774186 Ext 4416.

Closing date 3rd July 1987.

(00847)

HERFORD AND WORCESTER COUNTY COUNCIL

REPERINGE SCHOOL (ADDED) PRIMARY

Reperinge, Herefordshire HR6 9DU

Headteacher required from January 1988 Group 3 (N.O.R. 70) Primary School.

The Governors are looking for a practising and committed Headteacher for this post. An ability to play the piano and teach music with knowledge of computers would be an advantage.

Completed applications to be returned to the Chairman of Governors of the school.

Further details of the position can be obtained from the County Education Officer (Ref: 85W/011).

County Education Officer, Castle Street, Worcester WR1 3AG. (S.A.E. please).

One reference must be the candidate parish priest or minister.

Closing date 3rd July 1987.

MUCH MARCLE C.E. V.A. PRIMARY SCHOOL

Much Marcle, Herefordshire HR2 2LY

Appointment of Headteacher for January 1988 from this County Education Officer (N.O.R. 61). Candidates should be recommended by the governing body.

Application forms (on request) of the County Education Officer, Castle Street, Worcester WR1 3AG. (S.A.E. please).

Closing date 3rd July 1987.

Application forms and further details are available (S.A.E. please) from the Director of Educational Services (Ref: Staffing/DHT), Mercury House, Mercury Gardens, Romford RM1 3DR. Closing date 3rd July 1987.

(14006)

DEPUTY HEADTEACHER GROUP 4

Following the promotion of the present postholder.

An experienced and enthusiastic able Infant teacher is required to join a committed competent team and to take a lead in several curriculum areas. Familiarity with ITA would be an advantage but is not essential.

Application forms and further details are available (S.A.E. please) from the Director of Educational Services (Ref: Staffing/DHT), Mercury House, Mercury Gardens, Romford RM1 3DR. Closing date 3rd July 1987.

(14006)

ST HELENS

OF ST HELENS BOROUGH

COMMUNITY EDUCATION

RECLISTON LANE ENDS

SCHOOL, RECLISTON, ST HELENS

DEPUTY HEAD TEACHER

(Group 4) London Allowance £795.

Required for January 1988 an experienced, committed and hardworking teacher prepared to tackle curriculum development, pastoral welfare and games, computers and general school administration.

Application forms and further details obtainable from the Director of Education and Recreation, Guildhall, Kingston upon Thames, Surrey KT1 1EU (S.A.E. please) to whom completed application forms should be returned by Friday 3rd July 1987.

(14006)

ROYAL BOROUGH OF KINGSTON

upon Thames

An equal opportunities employer

(14006)

DEPUTY HEADTEACHER

RECLISTON LANE ENDS

SCHOOL, RECLISTON, ST HELENS

DEPUTY HEAD TEACHER

(Group 4) London Allowance £795.

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ROYAL BOROUGH OF KINGSTON

upon Thames

An equal opportunities employer

(14006)

PRIMARY DEPUTY HEADSHIPS

continued

ESSEX

RIVERSIDE COUNTY

INFANTS' SCHOOL

Ferry Road, Hullbridge, Essex, SSO 9ND

Tel: Southend 530982 (R01170)

DEPUTY HEADTEACHER (Group 4)

Required January 1988.

RS-A-ADVERTISING

Applications are invited from candidates with deep commitment to meeting the individual needs of the children; who possess the ability to play a leading role in a mutually supportive team of staff and make the best use of the opportunity for higher own professional development.

Closing date: 3rd July 1987.

Further details and application forms available from Area Administrative Officer, South East Essex Area Education Office, Civic Centre, Victoria Avenue, Southend-on-Sea, Essex, to whom all applications should be returned.

Closing date: 3rd July 1987.

RODGINGS CENTRAL COUNTY PRIMARY SCHOOL

White Road, Rodgings, Essex, SSO 9ND

Tel: White Road 588 (R01171)

DEPUTY HEADTEACHER (Group 4)

Required January 1988.

RS-A-ADVERTISING

Applications are invited from candidates with deep commitment to meeting the individual needs of the children; who possess the ability to play a leading role in a mutually supportive team of staff and make the best use of the opportunity for higher own professional development.

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Closing date: 3rd July 1987.

WEST SUSSEX

DURRINGTON FIRST

SCHOOL

Worthing

DEPUTY HEADTEACHER

Required for January 1988

for this Group 5 school.

Further details and application forms can be obtained from the County Education Officer, First School, Salvington Road, Worthing, West Sussex BN11 2JL (S.A.E. please). Interested applicants are welcome to visit the school. (140588) 110015

HEADS OF DEPARTMENT

CUMBRIA

CASTLE PARK SCHOOL

Redburn Road, Kendal LA8 6BE

(County M3-11 N.O.R. 410 and 50/21)

DEPT. OF UPPER JUNIOR

DEPT.

Required for Sept. 1987, a

Head of Department for the

Department of Upper Junior

Department, to whom all applications should be returned.

Closing date: 3rd July 1987.

Further details and application forms available from Area Administrative Officer, South East Essex Area Education Office, Civic Centre, Victoria Avenue, Southend-on-Sea, Essex, to whom all applications should be returned.

Closing date: 3rd July 1987.

RODGINGS CENTRAL COUNTY PRIMARY SCHOOL

White Road, Rodgings, Essex, SSO 9ND

Tel: White Road 588 (R01171)

DEPUTY HEADTEACHER (Group 4)

Required January 1988.

RS-A-ADVERTISING

Applications are invited from candidates with deep commitment to meeting the individual needs of the children; who possess the ability to play a leading role in a mutually supportive team of staff and make the best use of the opportunity for higher own professional development.

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PRIMARY EDUCATION

HARROW
EDUCATION COMMITTEE
BELMONT FIRST SCHOOL
Hilbert Road, Harrow
Went. Middx. HA9 7JT
Tel: 01-427 7907
TEMPORARY POST FOR 1 YEAR

Experienced teacher required for one year from September 1987, for the above school.
Temporary Scale 2 post available for suitably qualified candidates. An interview in any of the following might be an advantage.
Computers, Music, Social Studies including Health, and Science.

Outer London Allowance Payable. (24458) 110020
Application forms from and to be returned to the Headteacher by 3rd July 1987. Please enclose stamped addressed envelope.
Harrow is an equal opportunity employer. 110020

HERTFORDSHIRE
CASSIOBURY JUNIOR SCHOOL
Beltwood Avenue, Watford
Herts. WD17 2JF
Tel: 01-947 4411 110020

Teacher to take responsibility for the school's mathematics and science. A London fringe allowance is available. Apply by letter to Headmaster giving curriculum vitae and salary requirements. Closing date: 3rd July 1987. (394211) 110020

HILLINGDON
LONDON BOROUGH OF
HARINGEY
HAREFIELD INFANT SCHOOL
High Street, Harefield
Herts. SG13 6BT
Headteacher: Miss J. Andrews

Required for September or January, an enthusiastic and innovative teacher to take responsibility for the development of Language and Reading throughout the school.
Application forms from the Director of Education, Civic Centre, Uxbridge, Middlesex, UB8 3PH, to be returned to the school as soon as possible.

Outer London Allowance Payable. (24458) 110020

HUMBERSIDE
(EDUCATION DEPARTMENT)
EAST RIDING DIVISION
HESLE C.E. INFANT SCHOOL
Northgate Road, Hesle
Huddersfield, W. Yorks. HD1 2JF
Tel: 01-484 4411 110020

SCALE 2 POST - SCIENCE/TECHNOLOGY
Required for January 1988, or earlier, a teacher involved in a project of Science/Technology across a broad-based curriculum. The project is a commitment to the school's philosophy and the successful candidate would be involved in the management of the school as well as having curriculum responsibility.
Application forms and further details are available from the Director of Education, Civic Centre, Uxbridge, Middlesex, UB8 3PH, to be returned to the school as soon as possible. (24458) 110020

HOUNSLOW
THE BEAVERS COMMUNITY PRIMARY SCHOOL
Arundel Road, Hounslow
Telf. 01-570 9347
Headteacher: Mrs. C. A. Paskin

Required for September 1987 or as soon as possible, a teacher to take responsibility for the development of Language and Reading throughout the school.
Application forms from the Director of Education, Civic Centre, Uxbridge, Middlesex, UB8 3PH, to be returned to the school as soon as possible.

Outer London Allowance Payable. (24458) 110020

KIRKLEES
METROPOLITAN COUNCIL
DIRECTORATE OF EDUCATION
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Ravensthorpe, Dewsbury
W. Yorks. WF13 7JF
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Haringey

Haringey Education Service is conscious that, in general, teachers from black and minority ethnic backgrounds and bilingual teachers are under-represented in the teaching force. Applications from such teachers would be particularly welcome.

The same applies to women teachers, particularly for posts at a senior level in secondary schools and in certain curricular areas.

Haringey is an equal opportunity employer. We welcome your application, which will be considered on merit, irrespective of race, marital status, sex or any disability you may have.

EARLHAM INFANT SCHOOL
Earlham Grove, Wood Green, London N22. Tel: 01-868 2780

Scale 2 Post
With responsibility for ethnic and cultural diversity
Experienced and enthusiastic teacher wanted for this friendly school to take on the key role with respect to the curriculum and the school community. Applicants should enjoy advising and working alongside colleagues in the classroom. Introducing suitable activities and materials, and be equally at home working with a class on agreed activities while the teacher works with a group, prepares materials or undertakes INSET so as to better able themselves to provide for the ethnic and cultural diversity of their pupils. Applications from members of the black or ethnic minority communities represented in Haringey would be particularly welcome.
CLOSING DATE: 3.7.87

LANCASTERIAN NURSERY/INFANTS SCHOOL
Kings Road, London N17 8NN. Tel: 01-808 8088
Required for September 1987

Scale 2 Post
An experienced infant teacher committed to teaching in a multi-cultural environment. The successful applicant will be required to be responsible for Mathematics throughout the school. Ability to work as part of a team is essential.

Scale 2 Post
An experienced infant teacher committed to teaching in a multi-cultural environment. The successful applicant will be required to be responsible for Reading and Library resources throughout the school. Ability to work as part of a team is essential.

Scale 1 Post
A full-time teacher for an infant class. The successful applicant will have an opportunity to enter fully into the life of this happy, friendly and hard working school.

Scale 1 Post
A full-time teacher for the nursery, which is long- and well-established. Ability to work as an integral part of the Nursery team is essential.

LANCASTERIAN SCHOOL
Somerford Grove London N17

Scale 1 Post
for September
We need an enthusiastic and imaginative class teacher, to join a committed team of teachers. An interest in Music would be an advantage.
Visits to the school welcomed, please telephone to make an appointment.
CLOSING DATE: 3.7.87

Applications are invited for the vacancies. Unless otherwise stated, application forms and further details may be obtained (a.s.p. please) from Chief Education Officer, 48 Station Road, London N17 8NN and should be returned to this address.
London Allowance £1,215 payable. Removal Expenses - 100% in approved cases for permanent posts.

NEWHAM
LONDON BOROUGH OF
NEWHAM
CELESTINE INFANT SCHOOL
Celestine Road, London E13 0LX
Headteacher: Mrs. P. Robbins
Tel: 01-552 7777
Nursery (P) and Infant (I) Class

Scale 2 Post
An effective staff team has been created and the school is thriving. There is a need to strengthen and develop the infant Department and primary schools are committed to education and operate a liberal and open environment. The successful candidate will be responsible for the infant Department and primary schools are committed to education and operate a liberal and open environment. The successful candidate will be responsible for the infant Department and primary schools are committed to education and operate a liberal and open environment.

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**CAMBRIDGESHIRE
EQUAL OPPORTUNITY
EMPLOYER
BRETTON WOODS
COMMUNITY SCHOOL**

BRETTON WOODS COMMUNITY SCHOOL, Peterborough PE3 8DF
Principal: J.L. Gribble, B.A., M.Ed.
7, The Peterborough 266975P
Bretton Woods Community School opened in 1977. It is committed to the promotion of comprehensive values and the development of community education
Required for September 1987:
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An enthusiastic and committed teacher to work in the P.N.E.U. Education Centre.

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and is likely to display an enormous commitment to teaching in a community school and to exhibit a firm but sensitive approach to student behaviour.

Further details and application forms may be obtained from the Principal, Mr J.L. Gribble, at the above address (large s.a.e. please), to whom application should be submitted immediately.

(19856) 131022Z

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Roll) (Age Range 13-18).

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experience to co-ordinate the
throughout the school. The
will be expected to make a major
teaching of Applied Science. Scale 4.

DEPARTMENT OF MATHEMATICS Honours
a complete range of ability.
ing 'A' level required. Scale 3. (Post

Color School, Parkhill
with Swansea, SA5 7DJ.

Roll) (Age Range 7-11).

TEACHER committed to a policy of
with Special Needs into mainstream
ness to participate fully in the life of
ess. Applications from probationary
welcomed. Scale 1. (Post Ref:

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RSDAY, 2ND JULY, 1987.**

Application forms and further particulars for all posts apart from post Reference 1:19:87 can be obtained from the appropriate school concerned on receipt of a large stamped addressed envelope, quoting the post reference.



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QUALIFIED TEACHER OF THE DEAF to work initially at Cwrt Sani Comprehensive School. Applications will

The person appointed will work on campus in the Unit attached to the school. Applicants must be capable of providing support across the curriculum. This is a half-time appointment, Scale 2 + S.G.A. pro rata for 100%.

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Purvis Avenue, Dagenham, Essex (RM9 6AA)
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HARTINGSGURRY UPPER SCHOOL
Hill Rise, Hempton, Bedford MK42 7EB
Tel: Bedford (0234) 655355. Required for September 1987. A temporary teacher of English, scale one, to cover the maternity leave of the present post-holder. Application forms and further details from the Headmaster, H.A.E. please. Bedfordshire is an Equal Opportunity Employer. (134422)

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Rectory Lane, Bracknell RG40 2EJ
Required for September 1987. Teacher of English, Scale 1 or 2 for suitably qualified candidate. C.S.E. well established. 100% course work assessment. Single Study Unit Courses included in Department. Further information available from the school and to arrange interview. Tel: Bracknell (455041). Letter of application to the Head-teacher.

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BERKSHIRE NEWLANDS SCHOOL
Cotton Road, Maidenhead RG4 0JH
Required for September 1987. An enthusiastic teacher to teach English across the ability range and to develop the school's English Department. The ideal candidate will have a strong background in English and Drama as well as English as a Second Language. An ability to teach English as a Second Language is an essential requirement. Initial application by letter with full details of experience and references to the Head-teacher (SAB).

Berkshire has a scheme of reimbursement of lodging and removal expenses. Closing date: 29th June 1987. An Equal Opportunity Employer. (134422)

BERKSHIRE PARK HOUSE COMPREHENSIVE SCHOOL
Andover Road, Newbury RG13 2AG
Required for September 1987. A graduate teacher of English to join a forward thinking department in a traditional school. Ability to teach Drama an advantage. Enthusiasm and commitment. Application by letter to the Headmaster enclosing C.V. and names and addresses of 2 referees. Closing date: 2nd July 1987. An Equal Opportunity Employer. (134422)

BERKSHIRE MAIDEN ERLACH SCHOOL
Off Silverdale Road, Henley, RG4 0EJ
Tel: Reading 44497
Required for September 1987. Teacher of English (Scale 1) to teach in a forward thinking department. The ideal candidate will have a strong background in English and Drama as well as English as a Second Language. An ability to teach English as a Second Language is an essential requirement. Initial application by letter with full details of experience and references to the Head-teacher (SAB).

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BERKSHIRE (ROYAL COUNTY OF) SANDHURST SCHOOL
Downing Road, Owlsmoor, Camberley, Surrey RG2 0JH
TEACHER OF ENGLISH (SCALE 1)
September 1987. The work in the first three years of the school is to develop ability groups and in the 4th and 5th years the subject is taught in a more integrated manner. An interest in Drama would be an advantage. The ideal candidate will be a graduate with a strong background in English and Drama as well as English as a Second Language. An ability to teach English as a Second Language is an essential requirement. Initial application by letter with full details of experience and references to the Headmaster (SAB).

Berkshire has a scheme of reimbursement of lodging and removal expenses. Closing date: 29th June 1987. An Equal Opportunity Employer. (134422)

BERKSHIRE (ROYAL COUNTY OF) THE DOWNS SCHOOL
Compton, Newbury RG20 0JH
A well qualified, innovative teacher to join a team of committed and forward-looking specialists. The ideal candidate would be keen to participate in the First Year Integrated course as well as teach English throughout the school. Scale 1 plus £1,215 per annum (London Allowance). Salary, Social Priority Scheme. Allowance payable. Relocation and removal expenses in approved cases.

Apply by letter, enclosing C.V. and names and addresses of 2 referees to the Headmaster. (134422)

BEXLEY CROYDON BOROUGH WELLING SCHOOL
Essex Road, Wellings, Kent DA1 1JH
Tel: 01-304 8531
Required for September 1987. Two teachers - one English and one History to teach across the age and ability range to GCSE level. The Department is forward thinking and employs a variety of teaching strategies. Application forms from the Head Teacher. (40858) 134422

BROMLEY ST. CLAVE'S SCHOOL
Coddington Lane, Orpington, Kent BR6 9EJ
Tel: 0689 2010
Required for September 1987. Teacher of English, Scale 1 or 2 for suitably qualified candidate. C.S.E. well established. 100% course work assessment. Single Study Unit Courses included in Department. Further information available from the school and to arrange interview. Tel: Bracknell (455041). Letter of application to the Head-teacher.

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BUCKINGHAMSHIRE COUNTY COUNCIL
EQUIL OPPORTUNITY
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Wycombe, Bucks, HP11 1PW
Headteacher: Mr. D.A. Duckham
Required from 1st September 1987. An enthusiastic teacher to teach English across the ability range and to develop the school's English Department. The ideal candidate will have a strong background in English and Drama as well as English as a Second Language. An ability to teach English as a Second Language is an essential requirement. Initial application by letter with full details of experience and references to the Head-teacher (SAB).

Buckinghamshire has a scheme of reimbursement of lodging and removal expenses. Closing date: 29th June 1987. An Equal Opportunity Employer. (134422)

CAMBRIDGESHIRE HUNTINGDON ABBEY COMMUNITY COLLEGE
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Cambridgeshire has a scheme of reimbursement of lodging and removal expenses. Closing date: 29th June 1987. An Equal Opportunity Employer. (134422)

DONCASTER THE MCAULEY SCHOOL
The Mcauley School, Doncaster DN3 3QF
Tel: Doncaster 0309 537396
Required for September 1987. A well-qualified and enthusiastic teacher to join a team of committed and forward-looking specialists. The ideal candidate would be keen to participate in the First Year Integrated course as well as teach English throughout the school. Scale 1 plus £1,215 per annum (London Allowance). Salary, Social Priority Scheme. Allowance payable. Relocation and removal expenses in approved cases.

Apply by letter, enclosing C.V. and names and addresses of 2 referees to the Headmaster. (134422)

EAST SUSSEX HOVE PARK SCHOOL
Newell Road, Hove BN3 7BN
Comprehensive mixed; 11-18. Roll 1100
TEACHER OF ENGLISH (SCALE 1)
From September 1987. To teach across the age and ability range in the main school. The school is well resourced with two libraries and the latest technology. A resource centre is available for the use of the school. Relocation grants in approved cases. Application forms and further details to the Headmaster as soon as possible. (134422)

ENFIELD LONDON BOROUGH OF ENFIELD KINGSMEAD SCHOOL
Smithbury Road, Enfield, Middlesex EN2 1YQ
Roll: 1041
Required for September 1987. Teacher of English (Scale 1) to join a large department. The ideal candidate will have a strong background in English and Drama as well as English as a Second Language. An ability to teach English as a Second Language is an essential requirement. Initial application by letter with full details of experience and references to the Headmaster (SAB).

Enfield has a scheme of reimbursement of lodging and removal expenses. Closing date: 29th June 1987. An Equal Opportunity Employer. (134422)

ENFIELD LONDON BOROUGH OF ENFIELD ST. ANNE'S R.C. SCHOOL
Catharine Road, London N13 5TH
Roll: 600
Required from September 1987. A temporary teacher of English to teach in a forward thinking department. The ideal candidate will have a strong background in English and Drama as well as English as a Second Language. An ability to teach English as a Second Language is an essential requirement. Initial application by letter with full details of experience and references to the Headmaster (SAB).

Enfield has a scheme of reimbursement of lodging and removal expenses. Closing date: 29th June 1987. An Equal Opportunity Employer. (134422)

HAMPSHIRE COMPTON SIXTH FORM COLLEGE
College, which is due to open in September 1987. The representation of Secondary Education (11-19). In Compton there will be three 11-16 Secondary Schools and a Sixth Form College. Required for September 1987. Teacher of English (Scale 1) to teach in a forward thinking department. The ideal candidate will have a strong background in English and Drama as well as English as a Second Language. An ability to teach English as a Second Language is an essential requirement. Initial application by letter with full details of experience and references to the Headmaster (SAB).

Hampshire has a scheme of reimbursement of lodging and removal expenses. Closing date: 29th June 1987. An Equal Opportunity Employer. (134422)

HARROW HOLLOWAY SCHOOL
Sheldon Road, Edgware, Middlesex HA8 6AN
Tel: 084 1614/952 8502
ENGLISH
We wish to appoint a temporary teacher of English (Scale 1 or 2) to cover maternity leave from September 1987. The ideal candidate will have a strong background in English and Drama as well as English as a Second Language. An ability to teach English as a Second Language is an essential requirement. Initial application by letter with full details of experience and references to the Headmaster (SAB).

Harrow has a scheme of reimbursement of lodging and removal expenses. Closing date: 29th June 1987. An Equal Opportunity Employer. (134422)

ESSEX THE RAMSTON SCHOOL
Spinks Lane, Witham CM8 1EP
Tel: Witham 0231 1231
Roll 1980 mixed 11-18 comp. ENGLISH Scale 1
For September 1987. A well-qualified and enthusiastic teacher to join a team of committed and forward-looking specialists. The ideal candidate would be keen to participate in the First Year Integrated course as well as teach English throughout the school. Scale 1 plus £1,215 per annum (London Allowance). Salary, Social Priority Scheme. Allowance payable. Relocation and removal expenses in approved cases.

Apply by letter, enclosing C.V. and names and addresses of 2 referees to the Headmaster. (134422)

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HAVERING LONDON BOROUGH OF HAVERING
Havering Park School, Havering Drive, Romford RM 8BD
Tel: Romford 24134
Roll 1207 Mixed
ENGLISH Scale 1
For September 1987. A well-qualified and enthusiastic teacher to join a team of committed and forward-looking specialists. The ideal candidate would be keen to participate in the First Year Integrated course as well as teach English throughout the school. Scale 1 plus £1,215 per annum (London Allowance). Salary, Social Priority Scheme. Allowance payable. Relocation and removal expenses in approved cases.

Apply by letter, enclosing C.V. and names and addresses of 2 referees to the Headmaster. (134422)

HAVERING LONDON BOROUGH OF HAVERING CAMPION SCHOOL
Wingrave Lane, Hornchurch R11 3BX
Tel: Hornchurch 59332
Headteacher: Mr. J. P. D. DIC
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Voluntary Aided RC 11-18 School
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HAVERING LONDON BOROUGH OF HAVERING
The John Henry Newman Catholic School, Stevenage, Herts. SG1 1JH
Roll: 1041
Required for September 1987. Teacher of English (Scale 1) to join a large department. The ideal candidate will have a strong background in English and Drama as well as English as a Second Language. An ability to teach English as a Second Language is an essential requirement. Initial application by letter with full details of experience and references to the Headmaster (SAB).

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HAVERING has a scheme of reimbursement of lodging and removal expenses. Closing date: 29th June 1987. An Equal Opportunity Employer. (134422)

HERTFORDSHIRE BUSHY HILL SCHOOL
Bushy Hill Road, Hatfield AL9 7JH
Tel: Hatfield 33586
Required for September 1987. A well-qualified and enthusiastic teacher to join a team of committed and forward-looking specialists. The ideal candidate would be keen to participate in the First Year Integrated course as well as teach English throughout the school. Scale 1 plus £1,215 per annum (London Allowance). Salary, Social Priority Scheme. Allowance payable. Relocation and removal expenses in approved cases.

Apply by letter, enclosing C.V. and names and addresses of 2 referees to the Headmaster. (134422)

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Five form entry boys' school with form 130
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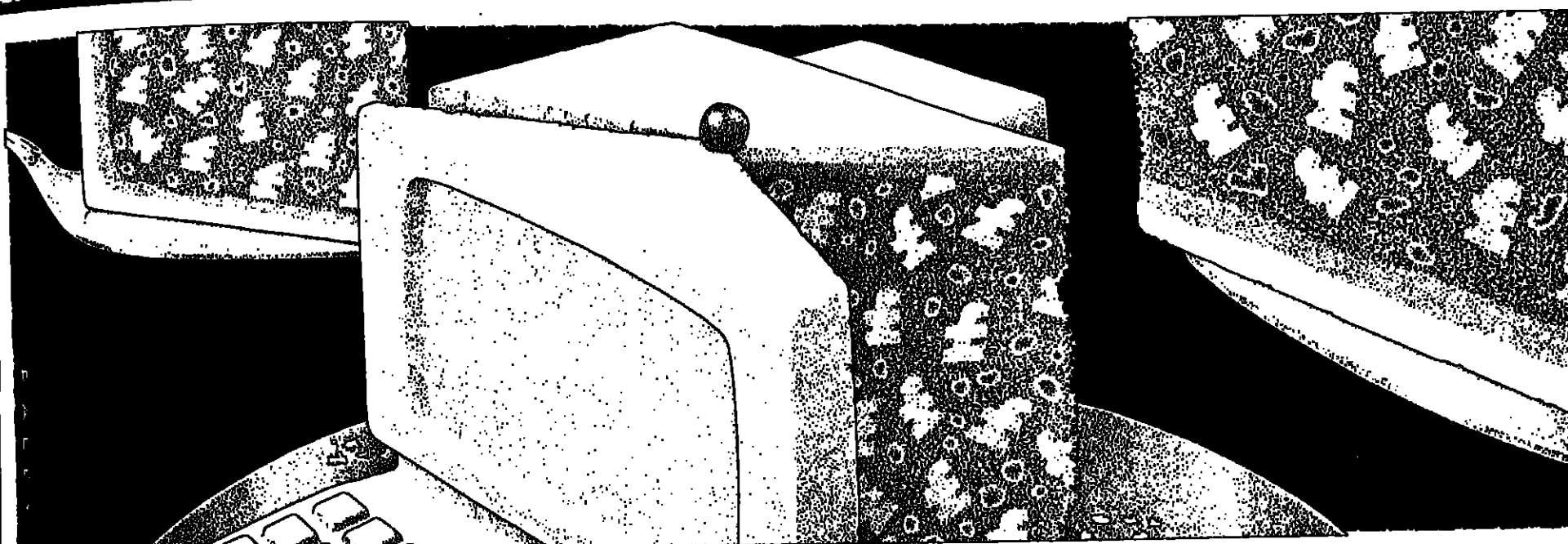
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Computers in Education



'Information Technology has already shown its potential to improve the education of school pupils of all ages and in most subjects. I seek now to spread its benefits more widely through the provision to schools of more microcomputers and more advisory teachers'. KENNETH BAKER

A question of priorities

On a May 7 the DES issued a news bulletin announcing Kenneth Baker's new proposals for Educational Support Grants until the end of the decade. The bulletin was headed "Big Boost for Information Technology in Schools and Further Education", and it devoted a total of £19 million to be spent on the "expansion of information technology (IT) in the schools". A further £4.8 million was to be allocated to IT in non-advanced further education.

A quote from Kenneth Baker in the bulletin indicates where his priorities lie: "IT has already shown its potential to improve the education of school pupils of all ages and in most subjects. I seek now to spread its benefits more widely through the provision to schools of more microcomputers, and more advisory teachers."

It seems, then, that education in information technology is to be extended by wider provision of micro and greater use of advisory teachers. Money is to be allocated to a total of 97 education authorities over a period of five years to achieve this aim.

A month prior to the DES bulletin, a major study on the role of information technology in education was published by Sheffield University. Under the title "Skills for the Future", it surveyed the existing provision of IT in education and compared it with the use of IT in employment at all levels. The main findings were published in *The TES* on March 13 and May 8, but the priorities which were suggested by a range of schools and employers for the future of IT education have important implications now for the latest Baker IT initiative. These are singled out below.

The lack of sufficient hardware in schools is seen by most teachers as a significant impediment to the spread of computer education across the curriculum. However, the project's interviews and a survey by The Times Network System clearly indicate two other factors.

The first concerns the distribution and organization of hardware. More than two-thirds of all microcomputers in schools are located in designated computer "laboratories" or computer rooms. This appears to have been a serious barrier to the spread of computer assisted learning in subjects such as modern languages and even mathematics, where less than 3 per cent of all computers in the survey were located. The use of networking of certain kinds appears to have been a further impediment. Although "networked" schools have (on average) far more computers than schools without networks, the latter were (again on average) far more likely to be using CAL in a range of subjects.

The second barrier is the lack of staff support. Many teachers interviewed feel a strong need for more in-service education for themselves, while those teachers actively engaged in using IT require far more time to be involved with others in catering for that need. In many cases, in-service development could be wholly school-based (with perhaps an outside catalyst or facilitator) if proper provision of staff time were made. Staff support is also totally lacking in the area of non-teaching assistance for IT. Very few schools have any paid technical help in computer education.

Many other findings emerged from the report which highlighted the important barriers to innovation in IT education. These can be seen as clear messages from the schools to the DES.

Teachers' priorities

□ In-service needs
Widespread in-service education is needed for all teachers if they need time and "space" to assimilate IT, not specific training.

One teacher from a TVEI school commented: "We need good will injecting into the system... money spent on teacher time rather than hardware. If only we could appoint co-ordinators on half timetable to give them time to talk to people. Communication is what's lacking totally."

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PLATFORM

Computer Studies

Few would dispute the valuable contribution which the appropriate use of computers can make throughout the curriculum. From the earliest years through to higher education, computers are increasingly seen not only as useful but often as essential components in the learning process. They can play a major part in the development of broad concepts about information and of general skills such as observing, recording, making decisions, communicating ideas, and taking a logical approach to problems.

So what is the need for courses specifically about computing? Too often these are viewed as a less satisfactory alternative to the use of computers across the curriculum, and this view is reinforced by the lack of adequate resources in many schools to support both. But ideally the two should be complementary.

To justify the provision of courses in computing we should first establish that the more general use of computers across the curriculum is not already meeting the needs adequately. We should then examine the nature of such courses and critically evaluate their contribution towards the overall aims of the curriculum.

I am an optimist and hope that the day will eventually come when there is a plentiful supply of suitable equipment rather than a shortage; when there is a broad range of high-quality educational software rather than a scarcity; when schools have technical support staff to look after these resources; and most particularly when adequate measures have been taken to meet the massive need for serious pre-service and in-service training and support in computing for all teachers. However, even in these Utopian circumstances, and with a planned and integrated approach to the use of computers across all subjects, the computing experiences and achievements of students will still be limited and patchy. They will often be specific and skills-based, and the computing knowledge will lack generality.

If the study of computing is limited to this, there will be little, if any, development of conceptual understanding, and the skills and abilities gained will lack transferability and adaptability — both of critical importance in this field. There is a parallel here with English and mathematics, which are also widely used across the curriculum but are not considered to be adequately covered without specialized courses as well.

Taking a broad view of the GCSE National Criteria for Computer Studies as a model for computing courses at any level, whether examined or not, what do we find? The essential basis of a course is to develop the ability to use computers sensibly in the solving of a broad range of information-processing problems. This involves much more than simply the use of some computing techniques. It demands a broad knowledge, based in practice, of the actual and potential uses of computers.

It requires students to study applications of computers in the world outside education and to become aware of their relevance and importance. They will come to appreciate the generality of computing and the universality of its application, as well as its limitations. They will develop their ability to cope with the abstraction and complexity inherent in the solving of significant problems. They will become more able to develop appropriate solutions and to make informed choices.

The skills and abilities developed must be transferable and of long-lasting relevance, leading to an adaptability which is essential in this context. Throughout the course there must be substantial relevant practical work designed to support these aims.

Most modern computing courses are like this, but unfortunately not all. There are some, often titled "Information Technology", where the approach is very practical but is focused on developing specific skills in the use of particular pieces of equipment and software, which will rapidly become obsolete, without sufficient attention to the development of general understanding based on broad principles and conceptual development. The recent MSC-sponsored study reported in *The TES* (see previous page) warns that such a narrow skills-based approach to IT education will have little educational or vocational value.

There is also widespread ignorance of the nature of modern computing courses and much prejudice based on out-of-date experience. For example, the Independent Schools' Policy Statement "Computers — Their Place in Schools" (1986) states: "There is a place for 'Computer Studies' for a few pupils who may wish to study the technology and its associated skills in greater depth". Few modern Computer Studies syllabuses devote much attention to the study of the technology, and those that do are unlikely to conform to the National Criteria and so should have a different title — Microtechnology perhaps.

Computing makes important contributions to most of the areas of learning and experience identified in HMI's *The Curriculum from 5 to 16* (1985). It also develops valuable aspects of each of the four elements of learning described in the same document — knowledge, concepts, skills, attitudes — and plays a major role in achieving the desirable characteristics of the whole curriculum, namely breadth, balance, relevance, appropriateness across a wide range of aptitudes and abilities, and continuity. Beyond these qualities, computing has the particular merit that the majority of students approach it with enthusiasm and a high degree of motivation. In modern society information is the key resource and the ability to use it effectively is of paramount importance. Computers and related communication systems are becoming all-pervasive. It is vital for the well-being of society that the individuals within it understand the nature of computers and computer applications and can

The great debate

JOHN HAMMOND
v
ROGER EDWARDSON

make reasoned judgements about their effects.

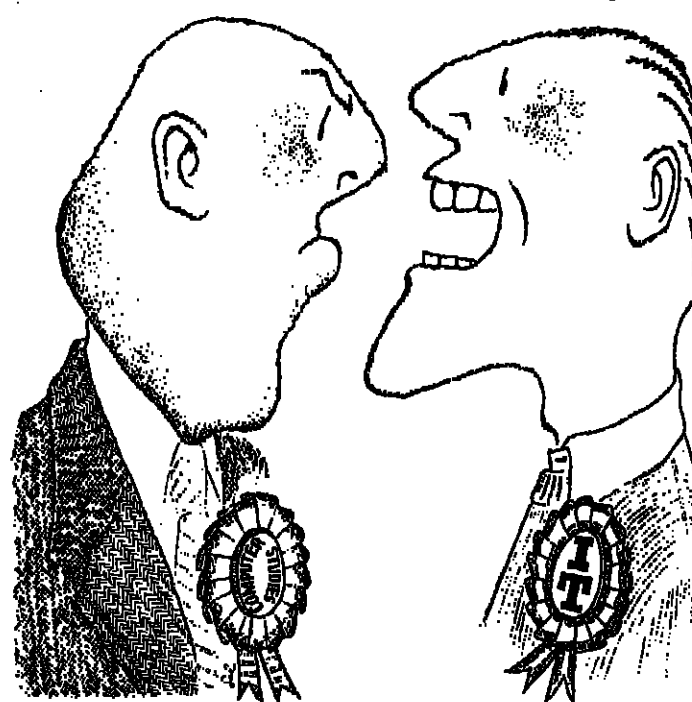
A discussion paper of HMI, *IT in the 11-16 Curriculum* (1982), recognized this need: "Pupils will need to live with information technology and be sensible in its use. They will also need to be aware of the considerable changes that IT is bringing to our society and of the major social, ethical and economic issues which arise therefrom (eg privacy, employment patterns, the role of money, automated medical diagnosis)."

The Alvey Report of 1982 is more explicit: "Action must start in schools. It is no good just providing schools with microcomputers. Teachers must be properly trained. Action is needed to increase the stock of computer science teachers by training existing teachers of other subjects in computer science and by encouraging young computer science graduates to enter teaching. The teaching of computer science in schools must be increased substantially, in quality and quantity. Whatever is used, the officially-recognized GCSE title Computer Studies, the current bandwagon title IT, or plain Computing (my own preference), there are good reasons for supporting the provision of computing courses. These include the educational value of the subject, the merits it has within the overall curriculum, the benefits it brings to the development of the individual, and its relevance and importance for society as a whole."

Kenneth Baker appears to recognize the importance of Computer Studies. When asked on BBC's *Question Time* (January 15), whether his plans for a core curriculum included Computer Studies, his answer was an unequivocal yes. He was not asked how this is to be achieved while his own DES, in the face of overwhelming evidence to the contrary, still fails to recognize computing with physics, mathematics and CDT as a subject with an acute shortage of teachers. A change of policy here is something we should all be fighting for.

John Hammond is a lecturer in computer science at City University London.

Information Technology



In reviewing the secondary school curriculum, and in the light of the recent moves towards a national curriculum, serious consideration must be given to the computing experiences on offer to students in the 14-16 age range.

A subject-based curriculum which includes Computer Studies is increasingly being viewed as inappropriate to the full range of students. Under the influence of the Manpower Services Commission through TVEI, local authorities have been required to produce schemes of work which are innovative, relevant, cost effective and coherent, so as to provide an enhanced curriculum for all levels of ability and with regard to equality of opportunity. The shift in emphasis is towards a skills-based approach. The technology offers a real opportunity to develop new teaching and learning strategies but all of these are required to lead to a nationally-recognized qualification.

There is a dilemma in using "old forms" of accreditation for an innovative and exciting new curriculum. GCSE Computer Studies is an Eighties solution to problems identified in the Seventies, to meet the needs of the institutions and, to some extent, the desire by central government to control the curriculum. Computer Studies National Criteria demand timed written papers, usually taken on completion of a two-year course with a minimum weighting of at least 60 per cent of the final grade. The title itself is misleading, implying the study of the computer and not the application of the technology which they appear to desire.

In order to meet the need for continuous assessment and relevant practical experiences, the Northern Group of I.E.A.s, funded through TVEI, have obtained approval from the Northern Examination Association for two syllabuses in Information Technology.

Unlike Computer Studies, IT places the emphasis on transferable information skills, which can be applied in many areas of the 14-16 subject curriculum. It is the application of the principles, practices and technologies involved in collecting, storing, manipulating and transmitting information. The method of assessment reflects a practical approach to the use of the technology across the curriculum. This definition of IT places emphasis on the information, so it develops the skills required to be discerning about the nature, the transmission and the technologies involved. One criticism often levelled at computing syllabuses is that they are out of date by the time they are examined. In other words, too much emphasis is placed on the computer technology and too little on the information process.

Information Technology does not confine itself to the use of computers, although they do figure large in the syllabuses. Areas such as video, photography, graphics and design and control technology are all important elements. Media communications forms an extension module which allows students to investigate the transmission of analogue information by video, film or audio. Programming can be another option for students who are more interested in the computer technology. It is recommended as a module for students who have developed a particular interest in the lower

school. Students must obtain accreditation in three core modules, extension modules and towards the end of the course a unifying module. The development team have produced support materials for each of the core modules and these are made available through local authority TVEI centres.

Unlike many Computer Studies syllabuses, IT contains a component on control technology. Careful preparation, and careful learning materials, the teacher should not be required to teach any of the control systems. Using a problem-solving approach and the Microtronics For All kits (or any alternative) the problems that are tackled are chosen for their relevance to the needs of the students. The teacher can use supportive rather than a didactic approach. Looking at the different ways of controlling devices, for example, can easily be integrated, through a curriculum, to achieve accreditation in IT and CDT.

In the communications module students could study "the school as an information centre". This might investigate all the different methods which information is received, transmitted, both within the school and from outside. Television, radio, telephone, electronic mail, and the bull system. A problem-solving approach might analyse any existing systems and identify weaknesses, considering alternatives. Students could design a system to overcome the difficulties identified. Information is the basis for the problem. The design adopted is real to the students and this could be appropriate to the English teacher.

In both cases the syllabus demands on the Computer Studies teacher to work with colleagues in other departments (possibly science teaching), so that the IT approach has relevance both to IT and to the subject area concerned. This is a covert means of spreading information technology across the curriculum which is a thematic approach which can be adopted for any modular course in IT. Because Secondary Examination Council has not yet grasped the need for unit accreditation, the full course must be completed to obtain the grade at GCSE. Unit accreditation can be offered through NPRA, so teachers adopting this approach need not worry about assessment of their own schemes of assessment following the criteria laid down in the syllabus.

The amount of work proposed should not be underestimated. It is recommended that education authorities adopt the scheme rather than individual schools, to divide the work and improve the quality of assessment and moderation will be required. As familiar with CSE Mode 3 assessment will find this quite acceptable.

Copies of syllabus A and B, and details about the additional support materials (for A only) are available from Mr Johnson, the NEA, 101a, 101b, 101c, 101d, 101e, 101f, 101g, 101h, 101i, 101j, 101k, 101l, 101m, 101n, 101o, 101p, 101q, 101r, 101s, 101t, 101u, 101v, 101w, 101x, 101y, 101z, 101aa, 101ab, 101ac, 101ad, 101ae, 101af, 101ag, 101ah, 101ai, 101aj, 101ak, 101al, 101am, 101an, 101ao, 101ap, 101aq, 101ar, 101as, 101at, 101au, 101av, 101aw, 101ax, 101ay, 101az, 101ba, 101bb, 101bc, 101bd, 101be, 101bf, 101bg, 101bh, 101bi, 101bj, 101bk, 101bl, 101bm, 101bn, 101bo, 101bp, 101bq, 101br, 101bs, 101bt, 101bu, 101bv, 101bw, 101bx, 101by, 101bz, 101ca, 101cb, 101cc, 101cd, 101ce, 101cf, 101cg, 101ch, 101ci, 101cj, 101ck, 101cl, 101cm, 101cn, 101co, 101cp, 101cq, 101cr, 101cs, 101ct, 101cu, 101cv, 101cw, 101cx, 101cy, 101cz, 101da, 101db, 101dc, 101dd, 101de, 101df, 101dg, 101dh, 101di, 101dj, 101dk, 101dl, 101dm, 101dn, 101do, 101dp, 101dq, 101dr, 101ds, 101dt, 101du, 101dv, 101dw, 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101zy, 101zz.

A question of priorities

continued from page 49

□ The use of CAL needs to be encouraged and enhanced in all subjects. At present its use in the secondary curriculum is confined to a few subjects, apart from in exceptional cases.

□ IT Co-ordinator Schools need an "IT co-ordinator" to encourage the diffusion of IT across the curriculum and the use of CAL in appropriate ways. This person needs the time and encouragement to do that job properly, by acting as a kind of "roving consultant" from school to school.

□ Technical assistance Technical assistance is desperately needed in the IT area. Many teachers are acting as unpaid technicians, from copying discs to transporting hardware.

□ Management of Resources The use of resources, including the allocation of hardware and its location, needs to be carefully examined in schools. For example, what is the effect of providing a dedicated computer room housing the majority of a school's hardware? Does the use of networks inhibit the diffusion of IT? The keys to extensive use of IT and CAL seem to be flexibility, availability and portability.

□ Coherence and continuity Work clearly needs to be carried out on the development of authority policies to ensure coherence and continuity between IT in primary and in secondary education.

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The second major strand of the "Skills for the Future" enquiry concerned the use of IT in employment and the needs of employers in relation to IT education for the future. Again, the project used a mixture of methods in acquiring evidence, including interviews, visits, case studies and a questionnaire sent to 1,000 employers in all sectors of industry and commerce.

Employers' priorities

□ IT awareness "IT awareness" for all pupils is seen by employers in all sectors as an important aim: "... computer familiarization should be integral to the education process from the word 'go', to create total IT confidence in the population."

□ IT specialists An increasing number of IT specialists at graduate level and above will be needed in the future. The supply at this level will not be helped by early specialization at school, or by an early emphasis on a vocational curriculum.

□ General education through IT The importance of a sound, general education, and in particular literacy and numeracy, was constantly stressed by employers. IT should be used to enhance these abilities not replace them.

□ Specific skills Providing specific training in IT or concentrating on specific vocational skills in IT was not seen as an appropriate aim for school education. Only key skills were mentioned as a specific asset by employers.

□ Information handling IT education should concentrate on general principles and understanding relating to the handling of information and the use of IT: "The rate of change of technology means that training should be based not on the understanding of a specific technology but on the ability to assimilate and gain an understanding of new technology as it appears."

□ Computer studies The vocational significance of computer studies as an examination subject has, in the past, been overestimated. The place of computer studies in IT education needs to be critically examined. This links to the study of school provision, where many teachers suggested that the dominance of computer studies was inhibiting the diffusion of CAL and IT use across the curriculum.

Men far outnumbered women in the higher echelons of information technology employment. This is partly caused by the shortage of output from higher education in IT-related subjects, which may in turn be exacerbated by early specialization or an early emphasis on a vocational curriculum. This is a key issue for IT education at all levels.

□ □ □

The messages summarized above provide pointers as to where Mr Baker's £19 million might be directed. Some, if put into practice, will cost money. Others will not, requiring only a shift in policy and direction.

According to the DES, the £19 million is to be divided between the provision of hardware, a total of £8.5 million to be spent in the first year; and support for advisory teachers, a total of £10.5 million to be spent over a five-year period.

A crude calculation (without the

benefit of a formula) indicates that the "average authority" will receive a sum of £87,628 for hardware. If that average authority has 25 secondary and 150 primary schools, the sum amounts to an average of £500 per school. By carving up the cake this way each school could purchase perhaps one microcomputer system.

Again, using crude calculations, the "average authority" would receive £21,649 per annum to support advisory staff in the IT area. Such a sum would support one advisory teacher for the whole authority if that were the policy adopted.

Having looked at the figures in this crude way, it is painfully clear that the DES £19 million will have to be spent with extreme caution. The messages above indicate some of the principles and priorities which should guide spending, but in particular, they suggest that the diffusion of IT across the curriculum is not a hardware problem alone — it is equally a human one.

The complete report can be obtained by sending a cheque for £5 (for "The University of Sheffield") to J.J. Wellington, Institute for Information Technology, University of Sheffield, 196 West Street, Sheffield S1 4ET.

Jerry Wellington is a lecturer in the University of Sheffield and director of the "Skills for the Future" project.



Wallop, the Weybridge Preparatory School, offered its parents the chance of using its facilities and expertise in computing to learn how to use the computers like their children. This was in January. In the spring term two beginners' courses were initially offered, but within 48 hours they were so over-subscribed that a third had to be set up. There are now plans for further beginners', intermediate and advanced courses in the autumn, as well as a separate one for word processing. These cover everything from turning on the machines to disc storage and retrieval, programming and graphics. Languages offered are Logo and Basic, and a mouse is used as well as the joystick and keyboard.

with almost all makes of computer. And they have the largest range in the country, don't you know."

Hetherington's brow furrowed in thought. "Olympia. I'm sure I've heard the name."

"Course you have, you dunderhead. Olympia have been in schools for thirty years. That's almost as long as us," added Cuthbert gloomily.

Hetherington gazed admiringly at the keyboard's smooth, uncluttered design. "Must've cost millions!" he ejaculated.

"Don't be dense! Value for money is the main consideration here. These machines can take a jolly good hammering every day, just like you. Anyway, I'm sure old Mr Jessop would have learnt all about that at the free demonstration."

"I say, you're a clever chap, Cuthbert. How does one get to know so much?"

"Dashed easy, old bean. One simply fills in the coupon."

"I've never seen a piano like it!" exclaimed Hetherington.

Cuthbert regarded him critically. "It's not a piano, you fat oaf, it's an Olympia electronic typewriter connected to the school's micro."

So sir had finally plumped for the Olympia, thought Cuthbert. Mr Jessop had made a wise decision, and, judging by his demeanour these few weeks past, one with which he was more than satisfied.

"The school's what?" demanded a mystified Hetherington. His podgy fingers played clumsily over the keyboard.

"Micro," replied Cuthbert testily. "You see, the good thing about Olympia is that almost all their typewriters are compatible

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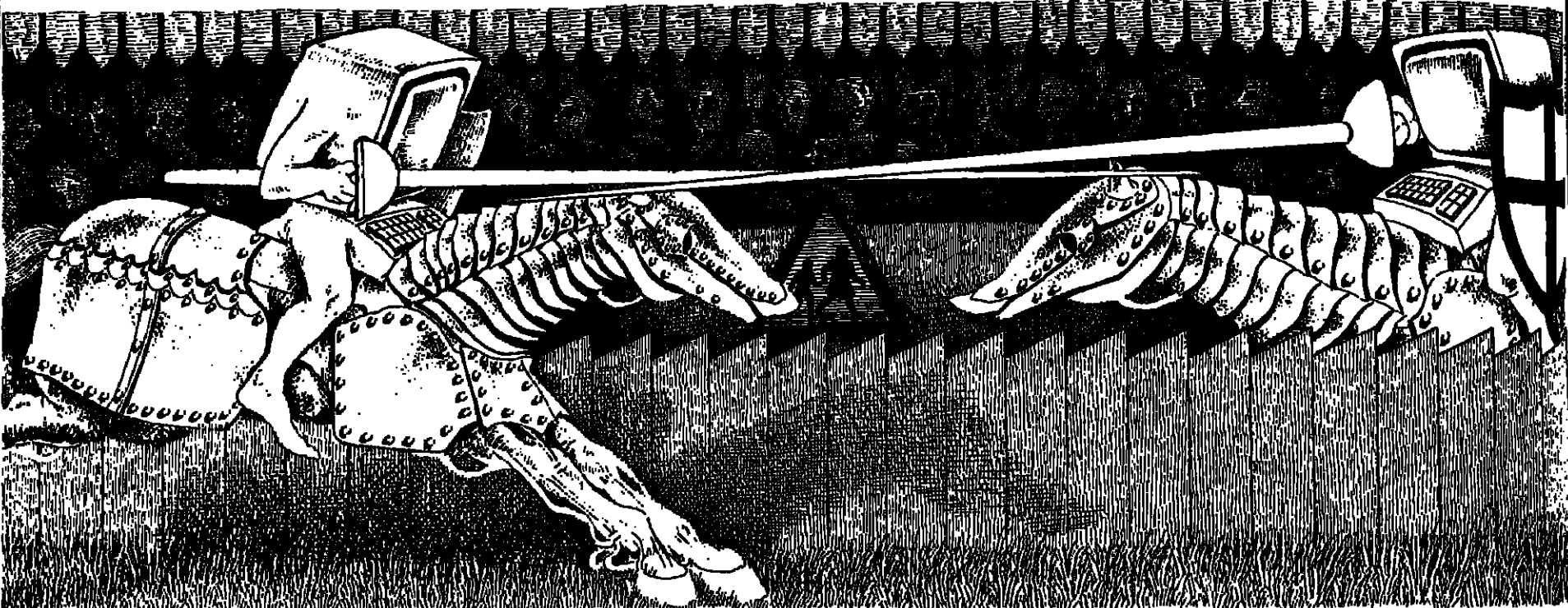
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HARDWARE

With several new computers on the market, what is the prospect for an educational standard?

Battle of the giants



The days of innovation in micro-computer technology are virtually over and schools should be able to settle down to a period of stability lasting beyond the year 2,000 as manufacturers collaborate to produce compatible hardware. The multi-tasking systems of today are only slightly different from those available two decades ago; the windows environment was available in the late Sixties and 32-bit architecture has been in the melting pot for over 10

years. No equivalent developments are in the melting pot any more, but 1988 would appear to be the year when these will come together and really take off in schools.

The picture of a bright future of collaboration and software that is easily transportable between systems is as rosy as it is unlikely. The chief reason is that Acorn doggedly refuses to lie down and accept MS-DOS as a national standard for computers.

This week, Acorn launched its long-

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awaited RISC machine (reduced instruction set computer - see page 53), Mike Page, their Corporate Communications Director, describes it as "not just one machine but a whole new approach to the philosophy of education that will set the scene for at least five years". In stressing this new approach, he says it is not the cost of the machine but the follow-up support for schools and teacher training that counts.

This is almost word for word what Mike Fisher of Research Machines (RM) said, following the launch of the new MS-DOS-based range of RM Nimbus systems earlier this year (PC186, AX286 and VX386). He too spoke of at least a five-year plan: "We must predict the needs of schools in 1992 and with the new range we think we have done so."

Acorn and Research Machines have remarkably similar philosophies and long-term plans but little else in common as the battle for supremacy in schools continues and begins to look like getting bloody, with Acorn dismissing MS-DOS as a serious contender and Research Machines accusing both Acorn and BBC Enterprises of an "unethical and misleading" four-year agreement enabling Acorn to use the BBC logo on its new generation of machines.

Both companies claim an unassailable position in the education market. But Mike Page insists that "despite enthusiastic preaching of an MS-DOS gospel, uptake in education has been relatively small". Desires for standardization and "the dubious assumption that 16-bit is better" have produced what he describes as "a great deal of ineffective but not many purchases".

He predicts no change in the foreseeable future and claims education DOS was never designed to meet. Having said that, he does not deny the need for some 16-bit and MS-DOS compatible but points to the plug-in module of the Master 128 as "giving the best of both worlds".

He argues that the success of MS-DOS in vocational education and the software is both beyond the price range of most schools and "horrendously difficult" to handle. The next generation of school computers, he says, must be 16-bit, have performance, and be able to be "at best, disappointing" in regard to its certain that a 32-bit system based on the very fast RISC architecture will dominate the market.

Education authorities are now looking for a single, easy-to-use and robust system for the next five years. Research

Machine's strategy is to introduce second-generation (16-bit) computers without problems of redundancy while providing a smooth transition to the third generation (32-bit) systems. Moving through the range from Nimbus to the VX386, he believes Research Machines will satisfy immediate educational needs and that they have already built the machines schools will be demanding in five years. The technology has been proven by the Apple Macintosh, he says. And far from being horrendously difficult to handle, it is a "pull down menu and push button" approach.

As educational demands become more sophisticated and prices fall, which they will, schools will move into the third generation and to a window environment, which allows different packages such as word processing and spreadsheets to merge.

With the RM range you will be able to run all applications on all three systems. You trade off resolution, colour and memory as you step back a generation. But it does appear to be some safeguard against obsolescence and, of course, all three generations can be networked together.

"Now IBM is using DOS (PC-DOS) and is interested in windows, you won't be able to buy a 286 or 386 machine from IBM that does not have Microsoft windows with it," says Mike Fisher. He sees a two-tier market emerging immediately: those with computers and offering educational support for everything from in-service teacher training to on-the-spot service from a team of mobile engineers; and those companies which supply little other than the computer.

Acorn may have the volume sales but RM claims a £12 million school market (£20 million in the university and polytechnic sector) with 22 local education authorities and the London Boroughs committed to RM computers. Since the days of the 3802, the company has established a strong lead in vocational education and is unrivalled in further education.

But just as Acorn acknowledges the need for compatibility with MS-DOS and a 16-bit architecture, BBC Enterprises is also looking for a single, easy-to-use and robust system for the next five years. Research

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HARDWARE

Acorn's new machines for education

Running a RISC

On Tuesday Acorn Computers launched a new generation of BBC micros. Called "Archimedes", this new family of microcomputers is 30 times faster than the original BBC micro and it may prove to be the most important new product in educational computing since the launch of the first BBC micro in 1981.

From this week, the Archimedes 300 will be the official BBC micro alongside the existing Master series. It and the rest of the family are based on revolutionary chip technology pioneered by Acorn and called RISC - an acronym for reduced instruction set computer. The new chips have allowed Acorn to produce 32-bit micros with a retail price starting at £799 plus VAT (educational prices will be lower).

Acorn claims that the new computers are the fastest micros in the world. In their production form, the new chips are capable of processing up to four million instructions per second (MIPS) and Acorn say they have even achieved up to 18 million.

The machines are compatible with most existing BBC software. They have an operating system which looks like an Apple Macintosh and the optional capability of running MS-DOS programs.

Two series of Acorn micros were launched at the same time. The Archimedes 300 series is officially dubbed the BBC range and the corporation has worked with Acorn to ensure the mutual acceptability of the new computer. There are two Archimedes machines in this range: the 305 and the 310, offering 0.5 and 1.0 megabyte of RAM respectively. The 400 series carries only the Acorn badge. A more expensive and more powerful range of micros, it initially offers two machines with up to four megabytes of RAM at prices up to £3,000 excluding VAT.

The history of RISC technology at Acorn is a story of triumph over disaster. The RISC concept for microprocessors was originally conceived at Stanford University in California in the early Eighties. It was based on the discovery that conventional microprocessors are highly inefficient because only 20 per cent of built-in instructions are used 80 per cent of the time. This 20/80 ratio is at the heart of the RISC concept.

The initial idea was to build a smaller (and therefore faster) chip which carried the vital 20 per cent of frequently-used instructions within the hardware design while removing the 80 per cent of rarely-used chip instructions and putting them into software. The principle is that although it takes longer for an instruction to be carried out if the chip has to search software for a coded instruction, 80 per cent of the time the chip will be running many times faster than a conventional microprocessor and this produces a superior overall performance.

As the concept developed, the researchers found ways of placing "building blocks" for the rarely used 80



This may prove to be the most important new product in educational computing since the launch of the first BBC micro

RAY HAMMOND

per cent of instructions into the redesigned hardware. The end result is a smaller, faster chip which only occasionally has to rely on external instructions to accomplish processing.

Acorn designers Roger Wilson and Steve Furber, the designers of the original BBC micro, began to explore the RISC concept in late 1983. Other companies including IBM and Hewlett Packard also mounted the RISC program, but until now the new concept has only surfaced as a product in esoteric IBM scientific workstations. For a small British company, the development of an entirely new type of processor represented a massive gamble.

When Acorn crashed in 1985 the company was already heavily committed to developing RISC for its next generation of microcomputers. Work on the new chip design is believed to be one major reason why

though it is a totally different design. The top row of red function keys so singular to the BBC micro reappears and fundamental operations like rebooting via the "Shift/Break" routine have been retained.

"We wanted to use all of the extra power available to us to make the machine far easier to use than existing micros," explained Bob Coates, Acorn's Marketing Director, last week. "With so much power available, it is hard for some people to imagine how it might be used, but we have devoted a lot of memory space to developing a new operating system which will be far, far easier to use for both teachers and pupils. This ease of use is the key to greater and more successful penetration of the computer in education."

The operating system, called "Arthur", is very powerful and provides control over the computer via a three-button mouse. The new micros have exceptional colour facilities (4,096 distinct colours of which 256 can be on screen at the same time) and all program functions are selected from "pop-up" menus which are clicked for action. Macintosh users will immediately feel at home in the Arthur environment, but Acorn is quick to point out that their development of a user-friendly operating system draws on the original Xerox research work and the many emulations such as "windows" which now exist in the IBM PC world.

Like the original BBC micro, the new machine has a massive potential for expansion. It is equipped with "bays" to take add-on "modules" which are now being developed by Acorn and third-party suppliers. These will include MS-DOS interfaces, modem modules and MIDI music interfaces.

The most important element in the new machine is its combination of very high power and relatively low cost. The power has enabled Acorn to make the machine extremely easy to use and it is through this step that the company hopes to reach that large body of teachers who are still proving resistant to using micros as teaching tools.

As yet there is very little applications software for the Archimedes machines. Although most BBC programs will run on it, schools lucky enough to get an early machine will not be able to use it immediately, unless they are already running BBC micros on an Econet network. This is because the new family of machines are fitted with the Sony-style 3.5 inch hard-case

floppy disc (as adopted by the new IBM PS/2 microcomputers) rather than the old 5.25 inch floppy standard. Schools with an Econet network will be able to purchase an Econet interface for the Archimedes and immediately transfer existing BBC software to the new disc format via the network.

Acorn say that any existing BBC program which runs on the Econet network is likely to work well on the Archimedes and only poorly-written and "badly behaved" programs are likely to require modification. BBC software publishers are now working on ways to offer software users a service which will transfer existing software across to the new disc format, but Acorn are not offering special help with this. They make it clear that the new machine is not a replacement for the existing BBC Master 128 series. They expect the BBC Archimedes machines to be used principally for new applications.

Despite the massive development costs, Acorn are launching the new computers with unusual caution. In the first three months only a few thousand BBC Archimedes will be produced (probably less than 3,000). Acorn is now seeking a way of getting this first run of "field trial" machines directly into the hands of key local authorities and a heavily-subsidized price. Over the next few months they have secretly been showing prototype Archimedes to i.e.a.s and advisers; hence their confidence that their package is right for the future needs of education.

Despite this, the first batch of machines in the market place is being regarded as experimental. Bugs in the system are likely to surface as the machines endure heavy use. The buyers of first-batch machines will be offered free upgrade paths so their machines become bug-free without charge and the main volume run of (hopefully) bug-free BBC Archimedes machines will start in the autumn.

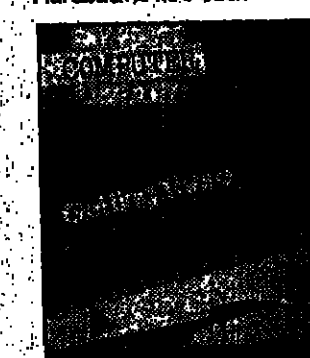
The Acorn 400 series won't be available in volume until 1988. Acorn expect this powerful range to appeal to further and higher education, but point out that it intends to expand away from its education-dominated market base and penetrate other scientific and technical markets. The 400 series uses the same RISC architecture as the BBC machines, but offers greater RAM capacity, greater expandability and a more flexible format. Future 400 series products include scientific workstations and powerful computer-aided design stations.

Hands up for hands on!

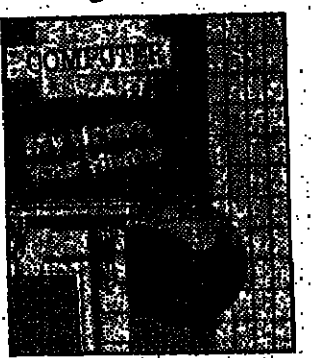
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HARDWARE

A new generation of business machines

Big blues

RAY HAMMOND

Two months ago IBM made their long-awaited announcement of a new generation of personal computers called the Personal System/2 and as the full implications of the announcement emerge, it is becoming clear that the move will have profound effects on business and commercial computing over the next decade. This in turn will have a strong effect on education. IBM has just abandoned the only standard that has existed in microcomputing.

In particular their launch has placed schools and local education authorities in a dilemma over future purchasing decisions about micros for secondary school use. The announcement of new BBC machines based on RISC processing (see page 53), and the arrival of powerful, low-cost alternatives such as the Atari ST machines and the Commodore Amiga, have already clouded what was once a fairly clear-cut issue. Now the new IBM machines are likely to establish a new standard in microcomputing, which means that any of the micros currently used for vocational training and business studies could rapidly become obsolete.

The first micros appeared in 1977 with small companies such as Apple and Commodore pioneering the market with incompatible machines. Although it wasn't until 1981 that IBM finally decided that this fledgling market was worthy of attention, the world rapidly dropped the incompatible machines and adopted the IBM-PC standard and, with the notable exceptions of Apple, Commodore and Atari, the world now computes to what is known as the "IBM-PC standard".

The bad news for IBM was that although they partially protected the design of the PC, manufacturers such as Amstrad, Compaq, Olivetti and Research Machines found methods of making computers which are compatible with the IBM-PC standard. "Big Blue", as the multi-national is affectionately known, discovered that these makers were able to "clone" their machines and steal a major part of the market.

Today the IBM-PC standard still dominates microcomputing in the business and upper end of secondary education sector but the basic technology is now nearly 10 years old. Since the introduction of the first IBM-PC new microprocessors have appeared which offer far greater computing power than can be utilized by the IBM-PC standard operating system, and the market has spent the past two years anxiously awaiting IBM's new generation of machines to see which direction microcomputing is going to take.

If it seems incredible that one manufacturer can have such control of a market, it has to be realized that IBM's position in world computing is almost unassailable. The company is five times larger than Digital Equipment (DEC), the world's second-largest computer maker, and the corporation is likely to have a turnover equivalent to the gross national product of Australia by the end of this century.

While IBM has been deliberating how best to take control of the future of microcomputing, smaller companies have tried to second guess them.

by launching their own proprietary computer systems based on the new chips. In the last year Compaq, the world's largest manufacturer of IBM-PC clones, has launched its version of new generation machines and companies such as Research Machines and Apricot have also risked going in alone to establish the new standard first.

All of these brave ventures now seem doomed to only limited success following IBM's recent announcement. The giant company seems to have succeeded in launching a new standard which will make it very difficult for other manufacturers to make economical clone machines while ensuring that the new standard can still use the benefits of the wide range of existing PC-standard software.

The new IBM machines have a generic title of IBM Personal System/2 (PS/2) and the range currently on offer has four models, the 30, 50, 60 and 80. The microcomputers are based on microprocessors from the Intel corporation called the 8086, 80286 and the 80386, and the 50, 60 and 80 models are of an entirely new design. The new computers also use 3.5 inch floppy discs rather than the old-fashioned 5.25 inch ones.

At the core of the new machines is a new "central nervous system" called the Micro Channel, which is the expansion bus on to which all future "add-ons" will be connected. Over the past six years thousands of third-party manufacturers have been able to make add-on hardware cards for IBM-PCs and their clones without paying a cent to Big Blue, but the "closed architecture" and patent protections of the new Micro Channel mean that all future add-on products can only be offered with IBM's consent (and financial participation).

At the heart of the strategy is IBM's "migration" policy. IBM has realized that the IBM-PC standard is now so widespread that it is wrong to consider it a generic standard: it is closer to being a standard which belongs to the industry as a whole. Users in schools and businesses all over the world have invested billions of pounds in software which operates on the IBM-PC standard and had IBM expected users to abandon this investment in favour of a new system, they would certainly have lost their heads.

As a result IBM is offering buyers of the new Personal System/2 machines a special "Data Transfer" software package which enables the new micros to run all of the existing PC software (although PC programs will still be unable to exploit the awesome power of "upper range PS/2s") and by this device the company is offering users the chance to move into the new microcomputing environment gradually while ensuring that as they arrive they are locking themselves ever more firmly into the future IBM environment.

Although the new IBM micros are potentially very powerful, IBM is now offering the machines for sale with PC-DOS 3.3, a modified version of the existing PC operating software which

cannot begin to utilize the power of the new machines fully. The company is not releasing a new operating system for the PS/2 until early next year, so it is unlikely that powerful applications software for the new standard will be available until the end of 1988. When the new software does arrive, users will be able to use one powerful central computer and several less powerful terminals in networks which are able to run many different programs at one time. But this approach is still two years away, even though other makers are able to offer these facilities today.

Despite this drawback, corporate and institutional buyers all over the world are placing orders for the PS/2s, the relieved knowledge that they stay with the "safe" bet of IBM computing without having to abandon their existing investment.

For secondary school computing, the arrival of the new standard means the purchasing decisions for the next couple of years have suddenly become very tricky. Until now schools have wanted to offer pupils computing experience on an "industry standard" have been able to buy low-cost clones such as Research Machines or Amstrad machines, in the safe knowledge that they were compatible with mainstream business and scientific computers while economic of hardware costs. This is no longer the case.

The world's major software houses are now writing new applications programs for the IBM PS/2 series of machines and these will not run on existing IBM-standard PCs.

Although IBM-style PCs will continue to dominate the market place for another 12 months or so, by the end of next year exciting new educational scientific and business applications will have emerged which will be specific to the PS/2 configuration and if schools wish to go on offering computing experience which is in line with the latest commercial computing, they will have to buy IBM machines. It is, of course, precisely IBM's aim.

The existing clone manufacturers are naturally trying to find ways of "copying" the PS/2 system without either infringing IBM patents or paying money to the monolith. Doing such a deal could be much easier than it was when they set out to emulate the original PC-standard. IBM has now learned from its past mistakes and has used "closed architecture" to set up the new PS/2 design extremely tightly.

Human ingenuity being what it is, we can be certain that an Amstrad type clone will eventually emerge, and the cost of parallel development and the effort that will be required to produce such compatible but substantially different machines will not produce low-cost clones and, without price advantage, emulation machines will have little to offer. In addition, IBM will have enjoyed several years of high profit margins from the PS/2 range and will be able to retaliate against clone makers by slashing their own prices.

To underline the fate of the IBM-PC standard, IBM have announced that it is slashing the prices of existing PCs by up to 25 per cent, phasing them out of production.

Transitional

JACQUETTA MEGARRY

The Transition Between Primary and Secondary Schools: An Information Technology Perspective

24 pages
Distributed free by the Microelectronics Education Support Unit, Science Park, Warwick University, Coventry CV4 7EZ.

CALG - the Computing Association's Liaison Group - has for two years represented a variety of organizations in investigating the problems of the primary/secondary transition. The publication of this report was partly funded by the DES, and copies should have reached state schools in England and Wales. Because some schools have not yet received it, it is being made available to all schools through the Microelectronics Education Support Unit.

It was an achievement to get all these sectional bodies sitting around a table and co-operating. It is scarcely surprising if the process which resulted from their meetings suffers from worthy blindness and lacks precision in translating recommendations into action.

It is easy to recognize that computing both increases the opportunities and underlines the need for primary/secondary liaison, some pupils leave their primary schools with more computer awareness than some secondary "computer awareness" courses ever succeed in creating. It is harder to spell out the practical implications: most primary

define each primary school as a joint partner, simply because of the many-to-one relationships in which secondary schools automatically pass on their knowledge.

Despite its failure to deal with such issues, this short report provides some thought-provoking comments and commendations on teaching, curriculum, communications, organization and resources. There is a reading list with contact addresses at the back. The booklet makes a useful starting-point for teachers, managers and planners considering what is an important problem.

The organizations represented on CALG are: Micro and Primary Education (MAPE), Microcomputer User Education (MUSE), the British Computer Society (BCS) and the Computing Society (CS).

Support for the Teacher and Curriculum

Teachers in all phases of education expend endless time and energy identifying pupil needs, developing strategies to meet these, locating or preparing appropriate materials, and all this before the actual business of teaching starts. It is hoped that the development of the NERIS database will help teachers with these tasks.

The first operational phase of NERIS the National Educational Resources Information Service was launched in February 1987 after just eleven months of development work. The NERIS team had all been drawn from LEAs where they had been working closely with teachers in the areas of curriculum development, in-service training or information technology. They were joined by programming experts from the university and commercial world.

To meet its objectives NERIS has to develop a system which will enable teachers to locate up-to-date and relevant learning materials and curriculum information that is scattered throughout the country. Secondly, to create a system which can be used with equal ease and success by those with little knowledge of on-line retrieval systems and by experts. Thirdly, to provide an electronic means of delivering teaching materials in their entirety directly to schools using existing technology. NERIS also has to stay ahead of developments in the field of information handling in order to assist schools as new technology and software become available.

Funding for development work comes from the Department of Trade and Industry via the Industry/Education Unit headed by Dr. Eric Bates. This same unit has been responsible for the Micros in Schools Scheme and more lately, the DTT Software and Modern Schemes.

The NERIS system

The inter-related systems required to operate NERIS are shown opposite. The computer system that holds NERIS information is located at the Open University. In order to cope with a range of information needs three levels of retrieval system are being developed. LEVEL ONE is aimed at inexperienced or casual users. It is presented in videotext so that it has a screen appearance like CEEFAX, ORACLE and PRESTEL although it operates in an entirely different fashion. LEVEL TWO is also in videotext but offers more search facilities, whilst LEVEL THREE will be a non-videotext system and have the comprehensive range of facilities. LEVEL ONE is currently available in schools, in the autumn, LEVEL THREE and a CD-ROM version should be available during mid-1988.

Teachers are only of value if they meet the needs of their users. NERIS is aimed at teachers and others involved in curriculum development. It will satisfy the need for a single source of curriculum data that is comprehensive and readily available in any easily accessible form.

Initially, NERIS will concentrate on building an information gathering network for the sciences, mathematics, geography, and social and personal development education. References to subject specific materials should not be taken as an indication that cross-curriculum materials are not included. Successful searches can be made on such areas as decision making, problem solving, study skills, active learning, industrial awareness etc. Whilst this pattern will continue, users should not lose sight of the stated scope of the database.

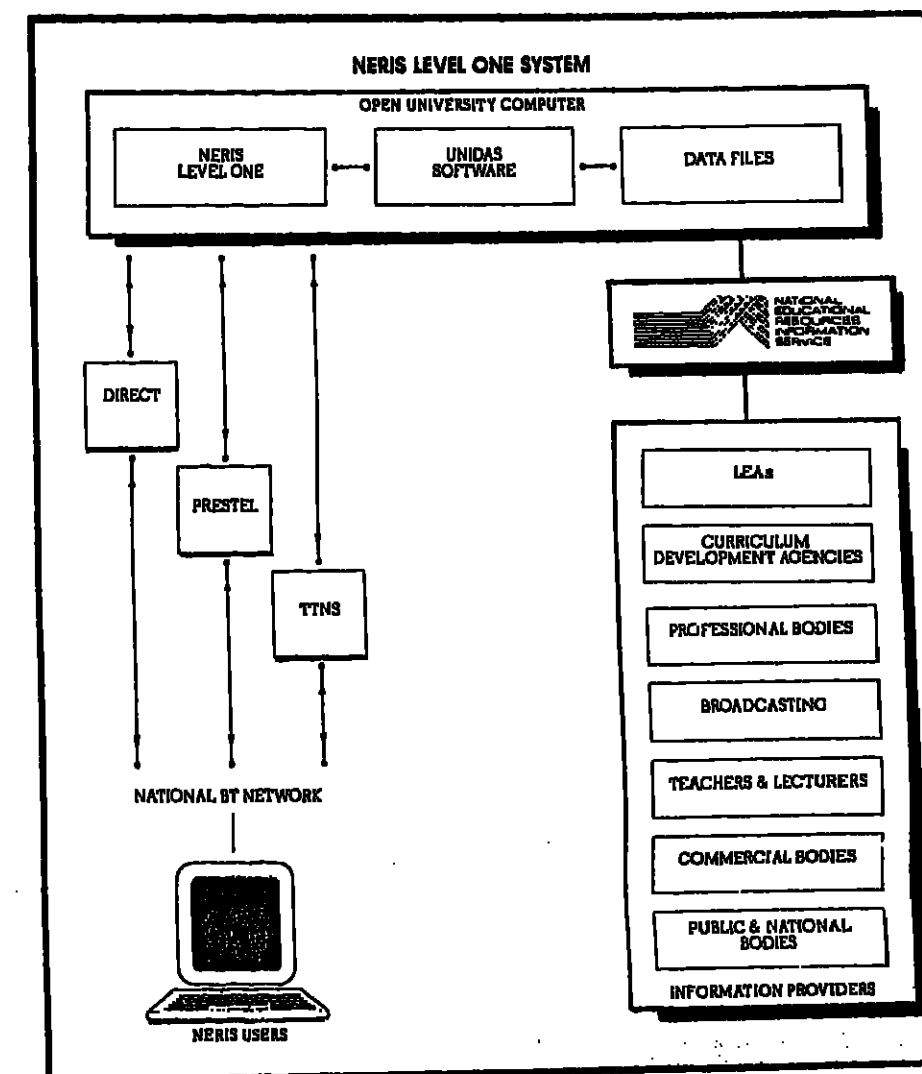
To understand what NERIS can provide let's look at a sample enquiry. Using the Search Screen opposite, the database can be searched for material or information in ANY MEDIA on ECOLOGY and CONSERVATION suitable for MIDDLE SCHOOL pupils. Such a search will produce information sheets, role play cards, worksheets, project guides, the details of nature reserves and many organizations throughout Britain with education facilities and services, details of visiting speakers, and a host of bibliographic references to film, video, books, resource packs and other materials.

Some records focus on a particular theme such as industrial applications of scientific principles, curriculum development projects, software reviews for special education, primary science and environmental studies.

Enormous effort is expended at both local and national level on curriculum development. Providing information about initiatives throughout the country is one of the areas of the database being developed with SCDC. The simplest record can take the form of a bibliographic reference or it can include data that will enable contact to be made with an individual or organization.

One of the exciting features of NERIS is its ability to carry some materials in their entirety. Whilst this is currently limited to text and simple graphics, a development programme for handling more complex graphics is underway. Using this facility it is possible to search for complete assignments and worksheets, for pupil

WELCOME TO NERIS



What will NERIS provide?

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Sources of Information

As teachers we use information and materials from a myriad of diverse sources. Some of these are commercial but there are many, not so readily available, that are often the result of local or national initiatives. To be effective NERIS needs to create effective procedures for collecting and validating data from all sources.

Since the first public announcement about NERIS in April 1986, there has been no shortage of potential information providers. However, the rapidly expanding list of sources has brought with it a plethora of logistical problems. To resolve these a number of models are being developed.

One very successful model has been based on the creation of networks where one organisation takes responsibility for co-ordinating the data gathering and input of other related bodies. Examples include networks based on such organisations as The Royal Society for Nature Conservation, The Natural Environment Research Council. The result has been to produce a comprehensive and uniform range of records.

Another exciting arrangement has been the creation of a primary science network. Here the emphasis is on the provision of information by teachers for teachers and, as in many other cases, the materials produced are only available from the database. This initiative is being co-ordinated by a group of SATROS. Teachers wishing to obtain further details may do so by searching the database for the title STEPS (Science and Technology Education in Primary Schools).

The widening range of information providers includes teacher groups, exam boards, LEA resource and specialist centres, educational publishers, the major curriculum development agencies, educational trusts, government bodies, other databases, special projects, subject and professional associations.

Access and Costs

Access to NERIS utilises computer technology already found in the majority of schools although many will need to acquire modems and should consult their LEA before purchasing this equipment. In the near future it is intended that users will be able to make a direct dial call to the database. In the meantime access is available to subscribers to both PRESTEL EDUCATION and TTNS.

The cost of using NERIS is limited to that of a local telephone call. To enable a wider audience to sample the database, the DTT has arranged to pay all network charges for users of the direct access which will be trialled this summer and should become more available in the autumn.

NERIS INFORMATION REQUEST FORM (TES/6/87)

For further information and an order form for NERIS publications and NERIS software, please complete the form below:

Name

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School/Organisation

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HARDWARE

Educational discounts – what are they really worth?

Cost cutting

GEORGE ROBINSON

Discount is a word that seems to make even the strongest marketing executives cry. Most micro manufacturers offer substantial discounts to schools and education authorities, but few are happy to be pinned down on their precise policy regarding educational purchases.

Not surprisingly, the companies with the largest profit margins on their computers also offer the largest discounts, but some of the companies with more competitively-priced machines value educational buyers highly enough to cut their margin to the bone in an attempt to get their brand of machines into the hands of tomorrow's business customers.

Apple are the most aggressive company in terms of percentage discount offered to schools, but their products are so powerful and expensive that only secondary schools and colleges are likely to consider them. At the other extreme the only company which failed to respond to our request for precise details about educational discounts was Amstrad, which has the reputation for selling computers at the lowest possible price. The only advice here is for schools and I.E.s to contact Amstrad dealers direct to see if the dealer values an educational order sufficiently to offer a discount.

At the low-end price range dealers' own margins on microcomputers are unbelievably small. On a £460 PC the dealer's profit is unlikely to be above £50 and this leaves very little room for

serious discounting.

Research Machines proved exceptionally coy and diffident about their pricing policy but finally they produced answers which indicate that they are more prepared than most to work with schools on restricted budgets.

"We have three price lists, a commercial list, a government list and an education list," David Jay, Marketing Executive at RML told me. After some consideration he added: "Actually, come to think of it, we have four lists because we also publish an A4 price list for schools on the Nimbus PC-1 computer which is different from the educational list." He wasn't exactly able to establish what the difference between the education price list and the school price list was and he later added a further complication of a separate price list for primary schools.

So, RML have five price lists for their machines. The company's pricing policy seems to resemble British Rail's marketing tactics of confusing the customer while offering some genuine bargains.

Commenting on larger orders, David Jay added: "We do have a fixed scale of prices for I.E.s but we will always negotiate on a very big order, even though we always operate the same pricing policy between I.E.s."

We don't allow our dealers to sell education, we do all educational sales ourselves.

"As a rough guide, our prices to education are about 15 per cent lower than to the commercial sector, but we

also bundle software and networks with educational products, so the benefit is even greater.

"Our educational price list is really for institutions other than schools. Primary schools are offered a different price from secondary schools because we realize that they can't afford too much. We have a strong position in this market and we try to accommodate schools as far as possible. The schools market is very important for us."

The lesson to be learned from RML's response is the same lesson that a seasoned DHSS claimant eventually learns. It is important to go on asking: RML appear to have some very attractive deals to offer.

On the other hand the company with the firmest policy about prices for computers in education is Apple, who are prepared not only to talk in detail about discounts, but to offer firm prices on its products.

"We have a very positive attitude to discounts for education as we have traditionally had a very strong presence in education around the world," explained educational marketing executive Steve Johnson. "We offer very substantial discounts to schools and educational bodies and we have a fixed policy regarding discounts. We tend not to think in terms of overall discount percentages, but rather establish an educational price for an item and stick to it."

"Our best-selling machine is the Macintosh Plus which has a high street price of £1,995 plus VAT. For schools



ordering between one and five units we offer this machine at £1,095 ex-VAT, between six and 17 units the price is £995 and if a school wants 18 or more machines the price drops to £895.

"For our more expensive hardware we have three prices: a retail price, a price for education generally and an even more generous discount for educational institutions which are members of the Apple University Consortium. For example, a business user will pay £5,495 for a Macintosh II with a 40 megabyte hard disc, an educational institution will pay £3,795 and if that institution is a member of the consortium the price drops to £3,595. All prices are excluding VAT."

Apple are pleased to supply potential customers with printed lists of educational prices, but these dramatic price cuts reflect the fact that all microcomputer makers Apple have been able to maintain the highest profit margins. Despite this, the Apple Macintosh range offers many facilities unavailable on other types of micro and the discounts for schools are very generous.

Acorn, the company that benefited most from the government's 50 per cent subsidy for school micros, which ran between 1982 and 1984, are today distanced from direct contact with the educational establishment, even though the BBC micro remains one of the most popular primary school computers.

"Acorn does not sell microcomputers or related products directly to schools but operates through dealers and distributors," said Gillian Ford of the company's PR agency. "It is the dealer who really decides what discounts will be offered to schools and education authorities and that discount is based on a number of criteria. As some I.E.s have their own servicing and support facilities this will obviously be reflected in the discount a dealer is able to offer, but in general our dealers are prepared to offer between 15 and 25 per cent discount."

"Other factors which affect the price to schools include whether the dealer is selling just one three-box system or whether there are a number of systems and software involved. We don't lay down a policy for our dealers and we don't publish any price guidelines."

After these three important educational suppliers there are any number of other micro makers who are keen to see their products in schools and make efforts to lower prices for education.

Tandy were once a major force in educational computing, but they have steadily slipped back in market share and aggression to the point where they are now simply another maker of low-cost PCs. Despite this, the company's UK head office in Walsall maintains direct links.

"For microcomputers we have a direct sales department for schools which offers a minimum of 15 per cent off the list price to educational establishments," said Harry Warburton, Tandy sales consultant. "We look at each request individually and make a price list for the order. Some items on our list will be reduced more than others. It is impossible to give an absolute range of discount terms. On PCs, the discount we are able to offer is usually dependent on the number of units involved. Obviously we are always

prepared to negotiate."

Apricot is another well-known company which has suffered severe reversals in fortune over the last couple of years. These British-made machines are used extensively in further and higher education and many secondary schools have Apricot machines who have served them faithfully for a number of years.

The company proved particularly reluctant to provide specific details about discounts on hardware prices for educational users; "We do have direct contact with schools and colleges in educational orders but we channel all eventual orders through our dealer," said an Apricot spokesman. "We realize the value of direct contact between ourselves and educational institutions but we always choose to supply via a dealer even if we have finalized terms before that happens."

"Our range of discount is wide, between 14 and 30 per cent, depending on which items are concerned and the value of the order involved. The smallest discounts are offered on the low-end micros, such as the entry-level 286 PC, but on more powerful hardware there is a larger discount."

Our survey also took in companies such as Commodore and Atari. Atari are doing particularly well at the moment and like several other makers prefer to leave decisions about educational discounts to its distributors and dealers. Commodore are currently formulating a new policy for selling to the educational market and are about to publish details of the discounts their dealers will offer to schools in future.

Perhaps the final word about the discount jungle in micros belongs to Stuart Smith, Sales Manager of the largest wholesalers of educational micros in the country. The company distributes micros and peripherals from such makers as Acorn, Apple, Atari, Compaq, Puma, Victor, Zenith and Microvitec.

"Manufacturers have different policies regarding discounts for educational customers," he explained. "In general there are three price structures. A price to customers at retail, a price to education and a price to dealers. Profit margins are very tight on microcomputers, between £1,000 to 15 per cent on computers up to £1,000 is typical, and that means that discounts and distributors are very limited in the discounts they can offer. As a general guide I would think that a discount for schools of between 10 and 15 per cent is typical."

A big educational order for us is 500 or 1,000 machines and we are naturally prepared to negotiate prices on large orders such as these. For example, numbers of micros, say up to 100, a school is likely to go to a local dealer but that dealer is not likely to have sufficient funds to be able to fulfil an order for a large number of machines. The buyer will then usually contact the maker and depending on their policy they will probably put the I.E. up to us."

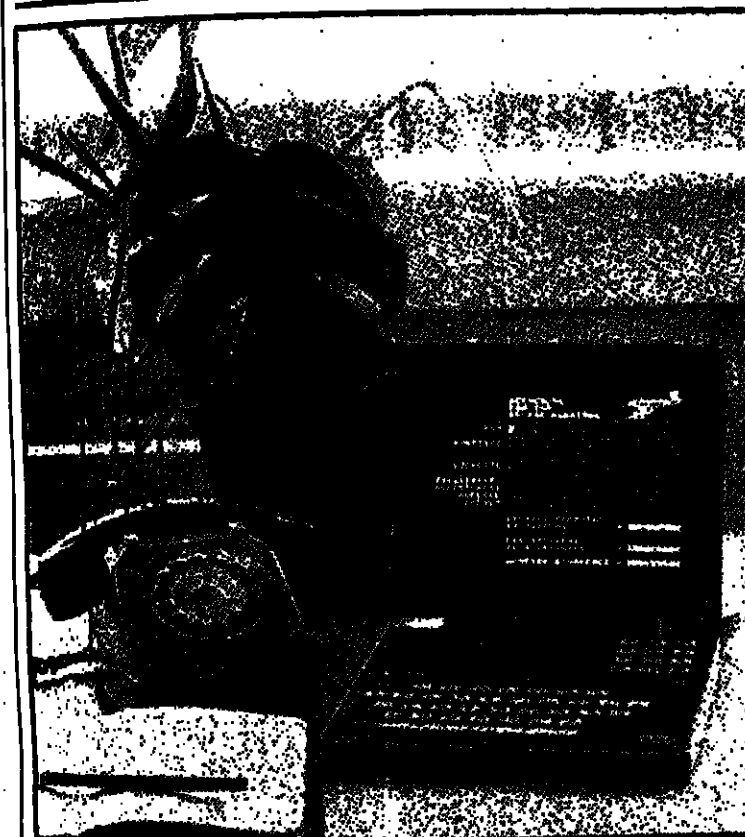
"Few dealers have got full servicing facilities so we often end up servicing machines even if they have been supplied via dealers. Our role as distributor is to support both end user and the manufacturer in the field."

OVERSEAS

Minitel is the latest craze in France for teleshopping and banking, but what can it offer schools?

Allo, 'allo!

GEORGE ROBINSON



In the last year over 50,000 French middle schools have been given free videotext terminals and telephones by DGT, the nationalized French telecommunications authority. The French school network is now more comprehensive than those provided to British schools by Prestel and the Times Network System (TTNS), although it offers no on-line learning resources.

The initiative started at the beginning of 1986 and will continue in phases until all French schools are provided with at least one "Minitel", the specially-made terminal for videotext and telecommunications.

Each terminal costs DGT 1,600 francs to install (about £160) and although schools have to pay their own local telephone bills when they access Teletel, the national videotext service, most of the services of interest to schools do not carry additional charges.

At first glance Teletel looks very like the British Prestel or TTNS, with large colourful "pages" of information, but it is far broader in scope and much quicker to use, and because of massive government backing it has already become a national success.

Over 2.3 million Minitels are now installed in French homes, businesses and schools compared with 85,000 Prestel and TTNS users in Britain and 60,000 videotext users in Germany. There is a massive clamour from the general public to replace their conventional telephones with Minitel terminals and DGT is finding it hard to keep up with demand.

For most domestic telephone users the electronic directory enquiries and the home banking and shopping facilities. The whole of France's directory system is now computerized at five regional centres and Minitel users at home are able to search the directory in many different ways at high speed.

Despite carrying information on over 24 million subscribers in its databases, the Teletel system takes only a quarter to half a second to provide information. Users can find telephone numbers and addresses by specifying a name only, a street or a profession. They can see details of all the telephone subscribers in a particular street at the touch of a button and search France for a subscriber even if only part of a name is known.

Banking and shopping facilities on the Minitel system are many and varied, with all national banks offering an "at home" facility for paying money in and checking statements. In addition, many commercial enterprises advertise on the network and customers can order a wide range of goods for direct delivery.

The object in providing Minitel terminals for the nine to 14 age group has been to broaden pupils' use of microcomputing and on-line communication. Although most French schools have several computers, the initial French government scheme to provide micros for schools, which started in 1982, was beginning to run out of steam with both equipment and software showing their age. The Minitel initiative has replaced the need for the government to supply the schools with modems, but those which have them can access the national network with standard micros running videotext software.

Although the national French curriculum agency does not use the Teletel network for distributing learning resources, plans are in hand to do so. In this area British schools still have a lead, following government initiatives to set up the NERIS and ECOTIS databases. Unlike their French counterparts British teachers and pupils can tap TTNS or Prestel to download resources or information on material.

TTNS is the closest British equivalent to Minitel, as it was established primarily for electronic mail communication rather than for its database. But it has yet to reach the mass audience achieved by Minitel.

Many local education networks have sprung up in France following the provision of school Minitel terminals and these are operated by both pupils and teachers for the exchange of information and software. Several major educational publishers also offer their goods via the Teletel network. In most instances teachers or purchasing authorities can dial up and order resources on-line.

But for pupils the most important feature of Teletel is the national "Chatline" facility, the on-line electronic mail noticeboard which allows schools across the whole of France to pool their ideas and knowledge on given subjects via the Teletel service.

In classroom use, a message or essay on a particular subject is prepared off-line and when it is in a form considered fit for transmission, Teletel is dialled up and the "document" placed in either a private message box for one particular recipient (perhaps another school) or one which can be accessed by any school interested in the same subject. The document can include both text and software. Pupils pursuing particular projects can then dial up to see if there is any new information on the subject.

The end result of the experiment is that middle school pupils in France now generally regard the computer as being integral with telecommunications. In British schools the majority of computer users still regard going on-line as a "one off" specialist operation, despite the DTI's provision of 12,000 modems last year. In France, they see a Minitel terminal or a school micro as the gateway to a much larger and more powerful national facility.

HARDWARE

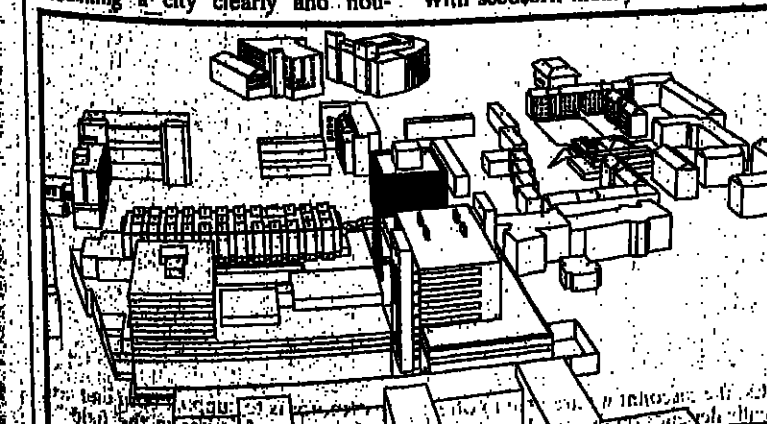
Take a computer, a database and a video camera
Fly your magic carpetThe Glasgow Experience
VHS video (11 minutes)

On free loan from Architecture and Building Aids Computer Unit Strathclyde (ABACUS), Department of Architecture, Strathclyde University, 131 Rottenrow, Glasgow G4 0NG

Most systems that claim to provide surrogate travel actually confine the traveler to a number of pre-ordained journeys. What is unique about this three-dimensional model of Glasgow's city centre is that there are no restrictions; within the area that has been digitized, you can fly your magic carpet over roof-tops, land on pavements and wander into buildings at will.

The sequence you see in *The Glasgow Experience* should not be mistaken for a film of traditional computer animation. What you see is exactly what the computer screen displays in real time, not a sequence of still frames shot one at a time and speeded up. That means that instead of confining you to the sequence frozen when the camera was set up, the system lets you choose any route you like. The video conveys the powerful freedom that this technology confers on its users.

In the video, ABACUS Director Tom Mavor explains the process of modelling a city clearly and non-



JACQUETTA MEGARRY

technically. The project began a year ago when Rutherford and Appleton Laboratories lent ABACUS an Iris colour graphics workstation (produced by Silicon Graphics Ltd.). Its super-microcomputer has dedicated graphics perspectives so fast you think you're watching real-time animation.

The process of building up a realistic detailed model of the city centre is intriguing. Ordnance Survey maps provided the basic terrain; the team then digitized the road network and floated it down on to the contours. Capturing the geometry of the buildings was the hardest part. Ground plans were easy to obtain, but estimating roof heights needed ingenuity. In addition to a Scottish Development Agency survey of the merchant city, the team scaled up measurements they made on a wooden model built by Glasgow District Council's planning department. Missing information was filled in with a cunning stereoscopic technique based on aerial photographs held by Strathclyde's Roads Department.

Collecting, digitizing and editing all this data is naturally time-consuming. With seedcorn money from Glasgow

Action – an independent group of private and public sector leaders chaired by Sir Norman Macfarlane – much of the spadework was done by students as vacation jobs. Many of them have continued to use the system in the course of their studies, confirming its educational potential.

Professor Mavor sees the capture of basic outlines as only the first stage. With suitable sponsorship, much more detail could be added to the building facades and interiors, as well as extending the area covered. And the more detail the database contains, the more scope it has for attracting fresh sponsors and applications.

The power of this system is worth seeing at first hand, but the hardware costs £25,000 plus. ABACUS can arrange for organizations to benefit from this unique database. Suppose that a property developer is interested in a particular group of buildings. It could ask to "fly" a specific tour over, around and through them and ABACUS will shoot a video of that trip. The system has immense scope as a professional tool for architects, planners and developers, clearly; but it also suggests tremendous applications for the teaching of geography, map-reading, perspective drawing and awareness of buildings and city centres.

Glasgow is the first city in Britain to have been modelled in this way, and the system has attracted interest from abroad. From Bordeaux to the United States, there are plans for a pavilion at next year's Glasgow Garden Festival with three workstations, and a video projector; visitors could explore the city at will, or opt for one of a number of guided tours – a surrogate walk around the historic merchant city, or a whitewash visit to all the Charles Rennie Mackintosh buildings, for example.

ABACUS wants to hear from people who might use or contribute to the database. Their video is not merely a fascinating glimpse of high technology in action; it also provides important insights for the future of teaching any subject in which shapes, buildings and cities are important.

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TELEFAX _____

TELEVISION _____

RADIO _____

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TELETYPE _____

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TELEVISION _____

RADIO _____

OTHER _____

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RESEARCH MACHINES

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OTHER

OVERSEAS

Didactograms from Belgium, hypertext from the United States, and software design from Canada

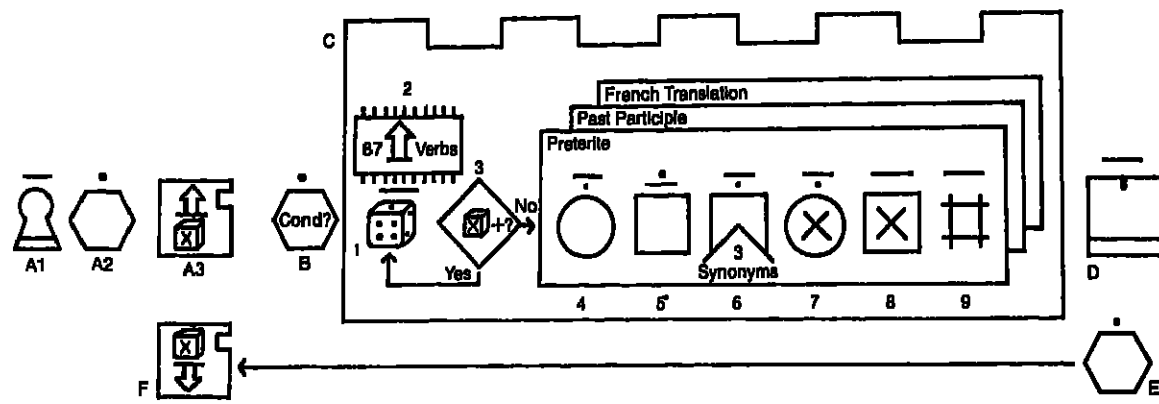
Nation shall speak unto nation

A few weeks ago representatives of six of the EEC member states met at the NFER headquarters in Slough to organize a joint conference on word processing and literary skills which will be held in 1988. Funded by the EEC, and organized by Frank Potter of Edge Hill College of Higher Education, the group tried to identify key issues and people working in the field - particularly those developing materials in the classroom.

At the conference, it became immediately obvious on talking to some of our European counterparts that, having taken a world-wide lead in computers in education, Britain is going to have to work hard to keep up with developments across the waters. Some of this is due in part to their late start and consequent adoption of 16-bit technology while we remain based on eight-bit machines by and large. But also it seems that, post-MEP, things have gone off the hilt a little.

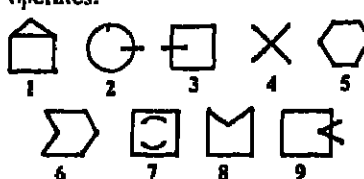
One very interesting concept that was discussed outside the main meeting was that of the didactogram, invented by Dieudonné Leclercq of the University of Liege, Belgium. In order to know precisely what functions are performed by a piece of software, you have to execute it completely. This is similar to tracing the electrical network of a large building by switching on and off all the lights and testing all the wall plugs. Didactograms are intended to eliminate this, rather like the circuit diagram of the building.

Didactograms are, in essence, a pictorial method for representing the structure and content of a piece of educational technology - not just software. In the words of Leclercq, they "provide an overall view as well as a detailed view... of the educational functions performed by courseware... and... facilitate the conception and evaluation of courseware... on the basis of educational psychology... by means of a pictographic system at two levels... which is simple, efficient and open." His work could be seen as an extension of both ITMA (Instructional Technology Methodology Analysis) and the method of interaction analysis created by Flanders that most teachers



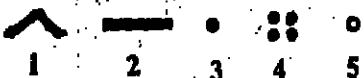
will have met during training.

A didactogram is made up of several small pictures which belong to one of a dozen or more families. Thus, the following are all concerned with the way a piece of educational technology operates:



- 1 Information transmission
- 2 Questions
- 3 Answer
- 4 Feedback
- 5 Decision
- 6 Search for information
- 7 Withholding possession of object
- 8 Consulting information
- 9 Giving an object

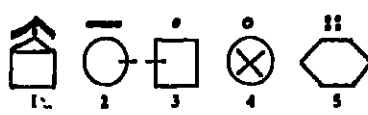
The following represent actors and receivers:



- 1 The teacher
- 2 The computer program
- 3 The student
- 4 A group of students
- 5 The physical environment

MIKE THORNE

A combination of these can already represent quite complex activities:



- 1 The teacher presents some information to the student
- 2 The program asks a question (supposedly of a student)
- 3 The learner answers a question asked by a program
- 4 The environment delivers some feedback to a question
- 5 A group of students makes a decision.

A complete didactogram for a drill and practice program would look like the chart at the top of this article, but the scope is by no means limited to drills. On the same grapevine came news from across the Atlantic. In the United States, it seems, exciting work is taking place with hypertext - information presented on a computer in such a way that the "readers" can change the structure of the text to suit themselves. Thus, hypertext would enable you to read a book much more efficiently.

vent by Kel Crossley and Les Green of Ontario, Canada. Their book, *Designing Computer Lessonware*, is the result of four years' work with more than 250 teachers and software designers, financed by the Computers in Education Center of the Ontario Ministry of Education. According to them, software should be designed in sequence of steps: "choose topic; design concept; market the design; design screen; key screen sequence; list of commands; conditions table for key screen; reaction table for key screen; minor screens; list of information needed; logic and rules; teaching notes."

Perhaps the only one of these that requires further explanation is "market the design". As Crossley and Green point out: "Universally, a market is a place with a central space where people walk at will, choosing the shops or booths that they wish to enter, selecting the route they wish to follow and making their choice of things to do or buy. Within the limited what is available in the district... each person interacts with the open structure of the marketplace according to his needs and interests... A flow chart didn't reflect the unity of a concept that must underlie a lesson. Nor did a flow chart show relationships among the various sub-sections in the context of that overall unity. A diagram of a market did."

This non-nonsense approach is typical of the whole book, which contains eye-catching illustrations to push in points home. And what is said is applied in examples to designing everything from drill and practice programs, through training packages to more open-ended simulations.

Designing Computer Lessonware, Les Green and Kel Crossley, 30 Longdale Road, Willowdale, Ontario, Canada M2N 4H3. Didactograms, D. Leclercq, Université de Liege au Sart Tilman, Belgium B32, Parc 4000 Liege 1, Belgium.

Mike Thorne teaches in the Department of Computing Mathematics, University College, Cardiff.

A Bulgarian conference on children and computers reveals a distinct shift away from the technology

Voices of caution

NICK RUSHBY

Bulgaria may seem an unlikely venue for an international conference on children and computers, yet Sofia, at the crossroads of the Balkans, is well placed to attract delegates from both West and East, from the developing as well as the developed countries. The adjective "international" is often used to denote a token representation from a few other countries; a conference such as this, with 400 delegates from 44 countries deserves the description.

In this setting, some of the contributions and ideas rose above the routine descriptions of work in progress. In strong contrast to conferences held in the UK and Western Europe, there was an active concern for the creative, cultural and social aspects of the information age.

There is a perceptible shift away from concentration on the technology towards a concern for people. Some years ago Seymour Papert was encouraging children to "own their computer". In his introductory keynote address, In Sofia he had moved his position, advocating that there should be a love of learning and of fellow learners. Other invited papers echoed a humanistic concern for the basic aspects of education in the information age.

Male idealism confronted female realism; male logic opposed female emotion; and male optimism was set against earthy female pessimism. There was no disagreement that the gaps - social, political, economic, psychological and physiological - existed and there was unanimity that we should strive to close them. The question was whether information technology is a major culprit? Could the computer be held responsible for the gaps that have opened up in our civilization over hundreds of years? And could it be used to bring us closer together? Do we have the political and social will to reduce the gaps?

Realism, pessimism and emotion won the day, but in the long term it will be our children who are the winners - or the losers. If there is to be a solution, it will not be through producing vast numbers of very cheap computers and pouring them into the gaps, but by building bridges between the haves and the have-nots, by involving everybody in these activities instead of having a few elite.

sions of the future shape of education and the need for lifelong learning. We should not think that the UK has a monopoly of thought in this area. Academician Andrei Ershov from Novosibirsk identified the persistence of the current classroom paradigm as one of the problems in reforming the educational system in the Soviet Union, and described the steps that are being taken to move towards a more flexible system.

A key message to emerge from the conference was that the educational needs (both in learning about information technology and in learning with information technology) are continually changing. We have to find ways of meeting and helping children to meet this evolving challenge. We should also pay more attention to the needs, problems and anxieties of the teachers in the information age.

Information technology offers the potential for a rich variety of learning environments - environments which will help learners to construct knowledge from information, as the next step in achieving understanding and, finally, wisdom. It offers the opportunity of reformulating their own educational aims and aspirations, and offers society the opportunity to provide and support a lifelong open learning future.

We pride ourselves that the UK leads the world in educational computing. Some warning voices caution that this lead is being eroded and will be lost unless we invest more resources. This conference showed that we do not lead in our concern for the creative and social aspects of educational computing.

OVERSEAS

From America, commercial programs at a fraction of the price

Share ware

Public domain and shareware software looks like taking off. For those using IBM-PCs, one of the many cheaper compatible clones or a computer capable of running PC-DOS or MS-DOS software, this is good news. Public domain and shareware computer programs are an American phenomenon aimed at making a wide range of software available at low or nominal cost. Some commercial programs priced at £70 can have a public domain equivalent costing £3 - £9.

The public domain programs have been made available to the public by authors who have waived their royalty rights and imposed few or no restrictions as to how their programs are used. You are allowed - even encouraged - to make copies of the programs to give to your friends. If you do make copies, you are asked not to make any changes to the program before you distribute it. Nor should you make wholesale copies to sell for profit.

User-supported programs, like shareware, are often distributed by those in public domain. These are copyright but may be copied and distributed by the user, the difference being that the author asks for a donation or small fee to enable you to become a registered user if you find the program useful. Registered users receive program up-dates as well as printed and bound documentation. Non-registered users have to manage by printing out the abridged manual provided as a "Read-me" file on the program disc. This can keep your printer occupied for an evening.

Shareware programs have been placed with the public domain distributors by authors or small software publishing concerns as a form of direct marketing. These discs will have a

basic working version of the full program - if you like the program you just send the stated fee to the author or publisher. On receipt of the fee the author will then send you the latest full version of the software, with complete documentation and the offer of free telephone advice. The advice is free, but the telephone calls to New York or California are not. In fact telephone support is not really necessary for most of the programs.

Although shareware is a "try before you buy" scheme, the shareware discs obtained through public domain sources are working versions of the programs, not just samples. Full working versions of the programs marketed in this way have to be good enough to compete with commercial versions costing up to 30 times as much. One shareware disc purchased for £5 is marketed commercially with a few enhancements at £99.

The catalogue for public domain and shareware outlines and lists the 5,000 plus programs. These range from simplified word processors and basic maths aids for young children to sophisticated word processors, spreadsheets and utilities. There are utilities to work with both the computer operating system MS-DOS and popular software packages such as *Wordstar* and *Lotus 1-2-3*. For those who like working with a particular computer

P D FIDDLER

language there is a good selection of tapes and tutors for Lisp, Logo, Pascal, Fortran, Basic and "C".

There are six public domain word-processing programs, including the full-featured *PC-Write* and the sophisticated *New York Word*, which can create contents and indices. *PC-Spell*, a spelling check program to run with these or other ASCII-type word processors, is another optional disc.

For anyone worried about his writing style, *PC-Style* can measure the readability of the work as well as any other text input in ASCII format. The parameters of the program can be altered to suit your own taste. Would-be playwrights can use *Screen-Writer*, which works with most popular word-processing packages to create dialogue referred to characters. It also numbers the scenes of a play and adds lighting and stage directions.

PC-File 3 is a popular shareware program, a menu-driven database manager, which is fast in operation, but easy to use, easier in fact than several database programs to be found in primary schools. The author of *PC-File*, who once worked for IBM,

seems to have the admirable idea of letting the computer do all the work. *Deskeam* is a fascinating memory resident utility. Load it into your computer's memory before you load other programs and it can be called up at any time to offer a selection of useful extras. It provides a calendar for any given month or year, an alarm clock, a type-writer mode, a printer controller, note pad, calculator and a method of accessing operating system commands. It is controlled simply from menus with icons or using a mouse device. So far no program has proved incompatible with *Deskeam*, but any memory resident programs should be treated with some caution.

There are teachers' notebook programs, games and music utilities, all American in origin. There are few UK home-grown public domain or shareware programs at present but this could soon change.

In the United States public domain programs are collected together, catalogued and administered by PC-SIG (PC Special Interest Group) from their headquarters in California and through franchised dealers. A well-organized PC-SIG library has recently opened in the West Midlands and is able to supply a complete catalogue.

Some distributors of public domain software do not carry the full range of programs but prefer to issue their

"own" catalogues instead. This has led to some argument that although much of the PC-SIG software might not be copyright, the PC-SIG catalogue and numbering system is.

The price of public domain software and shareware varies from one distributor to another. In some cases a "library membership" fee is charged and programs are sold to members at £7 rather than an advertised price of £10. It is generally thought that £10 is too much to ask and not in the true spirit of public domain software. The charge should be for materials only - the cost of a 5 inch disc - and a modest handling charge. At present, prices seem to vary from £3 to £8 per disc. The idea of public domain software or shareware is new to many - and unscrupulous dealers could take advantage of the fact that computer users are not used to paying £5 or less for a word-processor or spreadsheet program. It is advisable to check prices with the distributor before ordering.

At present the programs are all on 5 inch disc, but they should soon be available on the increasingly popular 3.5 inch format. For computer users with MS-DOS or PC-DOS, most public domain programs are a bargain.

Public domain software and shareware can be obtained from: ISD Software Ltd. (A PC-SIG franchise), PO Box 872, Sutton Coldfield, West Midlands B75 6UP. Advantage, 33 Malins Close, Chinnor, Oxon OX9 4EW. CPMUGUK, 72 Mill Rd, Hawley, Dartford, Kent DA2 7RZ. PC-Star (PC-SIG Authorized Dealer), PO Box 164, Cardiff CF5 3YB.

P D Fiddler is head teacher of Finham Junior Mixed School in Coventry.

Letter from America

In his keynote address at the "Learning in Future Education" conference at Calgary University last month, Professor Brian Gaines reviewed the progress of computer assisted learning (CAL) before an international audience of around 400 delegates. Here, Jacquetta Megarry presents a summary of Professor Gaines' address.

Advances in technology have raised many expectations in education but few have been fulfilled. The computer industry has yet to make the transition from information processing to knowledge processing. Electronics and software engineering are not enough; we need to study philosophy, psychology, linguistics, neurology, sociology, anthropology and education.

The early models for computer assisted learning were based on teaching machines. They gave way to intelligent tutoring systems, which assumed that we could model student behaviour and mental processes. This was an area where over-simplification is dangerous. Given our present state of understanding, it is more fruitful to use the computer system to present a model of the knowledge base, and leave the students in control of their learning processes.

Despite rapid apparent progress in the technology during the last 30 years, the underlying educational model has scarcely changed. The dominant influence has been control theory, with emphasis on individualized feedback - whether from teaching machines, teacher or interactive computing.

In the current fifth generation of technology, despite major progress on many fronts, there is a danger of diffusion and dilution. Although computers are used extensively in nearly all disciplines, and some universities have made student possession of a computer mandatory, their educational impact has been slight. There is a lack of imagination in applications, and little evidence that computer assisted learning changes how students learn and understand. The effort and expense of developing courseware is still far too high, and many packages that are technically impressive are educationally weak.

Information technology is not yet sufficiently mature to affect the core of education, which is knowledge. Although the focus in CAL has apparently switched to intelligent tutoring systems, they are still based on a theoretical blind alley, given

presume to model the student and try to produce optimal instructional material. This is an extension of the control theory approach which has failed even in industrial control: the problem is one of insufficient data from which to build a model.

Sixth-generation activities are being planned worldwide, with an emphasis on knowledge acquisition, application and processing rather than basic technology. A Japanese report on sixth-generation computing specifies four objectives for promoting knowledge science: innovations in frontier high technologies; economic and cultural advancements; contributions to the expansion of human potential; establishing a foundation for creative science. The proposed research program moves outside the boundaries of information technology, and draws on physiology, psychology, linguistics and logic.

When two people interact face to face, there is a very high "data rate": we absorb both verbal and non-verbal information very rapidly. Even with these advantages over computers, we still find it very difficult to "read" people. Yet many so-called intelligent tutoring systems depend on the assumption that they can behave as a sufficient model of student behaviour based on an occasional key-press.

If the sixth generation attempts the task of modelling students in real time, it will need far richer modes of interaction than previously. Advances in robotic vision and hearing techniques could allow computer-based systems to pick up facial expressions, body language, intonation and other cues that humans depend on.

Advances are already being made in the understanding and support for the processors of knowledge transactions. The bottleneck in industrial applications of expert systems is clearly that of transferring knowledge from the expert to the computer. It is difficult to predict the main focus of the seventh generation, but autonomous goal-driven systems will probably form its foundation. The emphasis on knowledge-based systems requires a different model for CAL - one based on systems theory. We cannot understand the total system in which human beings acquire knowledge without studying the diversity of processes whereby knowledge is represented, stored, processed, transferred and applied.

Brian Gaines holds the Killam Memorial Chair at Calgary University. His keynote address is published in full in the 372-page conference proceedings available from the Institute for Computer Assisted Learning which sponsors the LIFE conference (May 2-5, 1987) at the University of Calgary, Calgary, Alberta, Canada.

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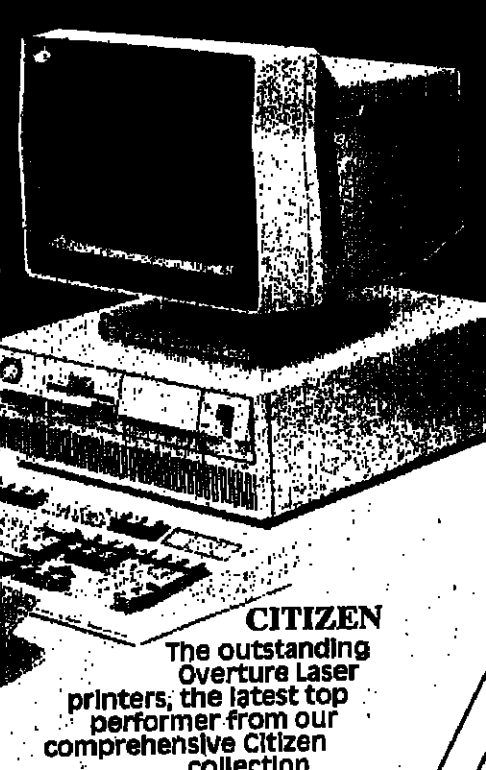
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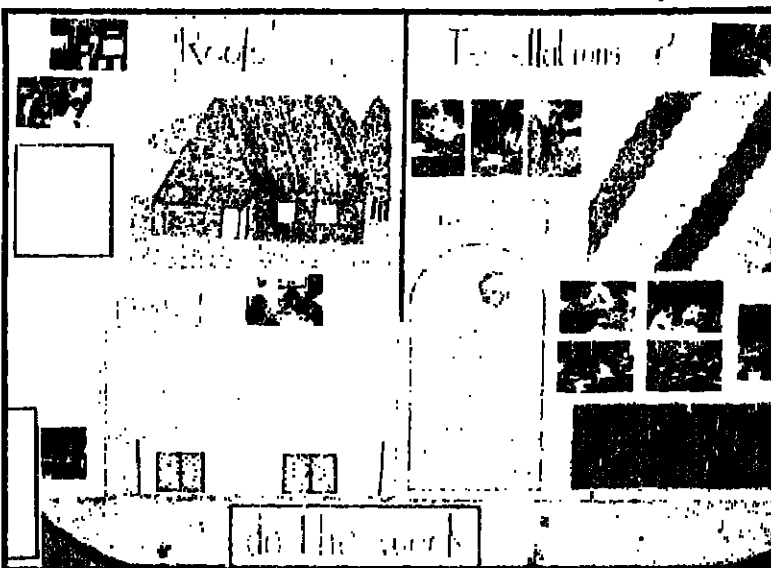
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UK-USA Microelectronics Project



Hands across the water

LESLIE RYDER and ALAN EVANS

Between 1982 and 1984 the National Union of Teachers organized a number of courses and workshops on microelectronics and its impact on education. During the courses frequent references to international experience suggested that in computer education teachers in Britain had much to gain from experience abroad.

The result was a two-year programme called the UK-USA Microelectronics Project. This was to examine the impact of microcomputing on schools and colleges in Britain and the United States. The NUT, the National Education Association and its three affiliates in Massachusetts, California and Washington State agreed to evaluate the implications of introducing computers to pupils aged three to 19.

A one-week seminar in May 1985 brought together 50 people from both countries who were professionally involved with computers in school and college. The majority were practising teachers who were to consider the impact of the microelectronics revolution on their respective school systems.

In the same month, the 22 American teachers spent a week in England or Wales, in the homes and schools of British teachers whose work and interests were similar. These visits were reciprocated in May this year, when the British teachers visited Massachusetts, California and Washington State.

Each participant was to develop a project or piece of action research in a major area of interest to them. Where possible it would be a collaborative venture with their American partners.

A second seminar and exchange visit was held in Washington State last month. Developments in computer education over the two-year period were reviewed and teachers presented their projects and findings using a variety of resources from video and software programmes, teaching materials, displays and research papers and reports.

Recent attempts to foster a close relationship between educational theory and practice have encouraged classroom teachers to engage in their own research. Some of it is bound to be individualistic or idiosyncratic, but the reports, displays and presentations at Seattle, illustrated the importance of this approach.

For two years the UK teachers had worked on their projects in the classroom, some in close co-operation with their American partners, others in parallel. Occasionally they even finished with a different project from the one planned, because of the incompatibility of hardware/software or changing school situations. Nevertheless, there were 42 written projects and presentations in Seattle, with a particularly impressive UK display.

The projects in the primary sector ranged from classroom experiments with word processors, new designs of keyboard and "content free" software to a cross-curricular project on design in the primary school, and multi-cultural software created in the classroom. One project encouraged children to explore Logo and turtle graphics, another required them to record their views on reading books, while a third showed how they can exploit the teletext/viewdata systems. All of these projects demonstrated the creative, cross-curricular and child-centred approach of the UK teachers' work, which was achieved with very limited facilities.

One project concerned with electronic mail not only linked schools in Cambridgeshire, but enabled them to communicate directly with Newcastle upon Tyne, Wellesley Junior High School in Massachusetts and a kibbutz in Israel. The active international dimension had a marked effect on the students' enthusiasm for the project as well as promoting lively communication skills.

With the more mature students, the project focused on three areas - the influences of industry, TVET schemes and extensive examination on the development of computer courses; a detailed study of how one large secondary school introduced information technology courses across the curriculum; and a look at ways of tackling the alienation of girls from computers in another large secondary school. Given free access to computers and appropriate software, the girls produced their own magazine programme and computer-designed movie.

The same kind of original work was reflected in the special needs projects which showed how computers can offer undreamt-of opportunities to those with severe learning difficulties. One study examined the micro-technology experience of a group of UK students over the two years and revealed the need for unity and continuity of provision as children move from primary into secondary education. This situation was paralleled in the USA and highlighted the need for a planned approach to computer education throughout a teacher's professional life.

What was impressive about all the projects was that they were the work of classroom teachers and head teachers, who had not only produced ideas, but organized the work and recorded what had taken place - successes, setbacks and failures. They had each stood back, appraised what they and their students had done and then shown it openly and willingly with others - in their written reports, their displays and their oral presentations.

The two-year programme has extended the knowledge, skill and professional capabilities of all the participants. The findings and strategic insights of the Microelectronics Education Programme, the Council for Educational Technology, the Microelectronics Education Support Unit, and DTT, the progressive local authorities and the NUT have all been of value and interest to our American counterparts. In turn, we have learnt from their more sophisticated approach to standards and evaluation of educational software, their deployment of larger computers and networked arrangements, and their much greater use of computers in educational guidance, careers work and school administration.

Both countries were concerned about the over-emphasis on investment in hardware and the under-investment in software development and the professional development of teachers. Serious concern was expressed over issues of equity and access to computers in both school systems and over the need for school management to reappraise its existing practice.

The conference report will be published in September, together with a list of recommendations to central government, local authorities, specialist agencies and teacher organizations. An exhibition of the UK teachers' projects will also be available in the autumn term, along with a video and 19 published reports. All of these are a testimony to the work of the UK teachers involved and to an exciting model of international collaboration.

Leslie Ryder acted as tutor/co-ordinator to the teachers from England and Wales and is project director of "Focus in Education".

Alan Evans is education secretary of the NUT and was the joint conference secretary.

Basic or advanced programming?

Speaking with forked tongues

PETER FELLGETT

An advanced programming language for pupils just starting to use computers sounds like a contradiction in terms. It does, however, now seem possible and could provide a solution to the dilemma between languages that are easy for the beginner to use and those which provide help for more advanced problems.

Academics have long expressed doubts about the language of Basic. Children exposed to it at school may acquire sloppy thinking habits which have to be unlearned at university. It is questionable whether university applicants are disadvantaged if they have not been exposed to computers at school. Computers are tools and it is better to have learnt things worth putting on them than to have acquired skill in using them for trivial purposes. More specifically, it is useful to know something of the nature of a computer program, but better to know nothing than to have acquired bad habits.

Nor is the problem confined to academic computing. The many complaints about the cost and unreliability of commercial software indicate that the need for adequate discipline is still not fully understood. While it may be possible in principle to program in a disciplined way in any language, some have positively to be fought. This is pointless when better alternatives are available.

A language like Basic has the overwhelming advantage that it is easy to get started; with a structured language such as Pascal many will be daunted before they have learned enough structure to produce a program that will do anything. There are several teaching languages which aim to make a structured approach more accessible. Logo is probably the best known. Their disadvantage is that they do not necessarily lead on to practically useful programming. The structure and discipline required of a powerful programming language that solves advanced problems are a hindrance to beginners who merely wish to see the computer run simple problems for them.

One solution is to begin on an "easy" language before graduating to a more advanced one, but this has two drawbacks: the need to learn a new computer language and, more seriously, the need to learn how to use the freedom provided by the disciplines of the new language. The distinction here is between learning a programming language and learning how to program.

These are two entirely different matters. To take the analogy of natural language, most of us in Britain know English but this does not automatically enable us to write literature. It is all too easy to go on using a better programming language in the same old way imposed by the defects of the elementary language.

A powerful language will do a great many things for its user, but have to be specified and defined, either by means of a comparatively small number of powerful concepts or by many weak ones. The latter approach seems easier to start with, because each concept is simple to learn, but it leads to a very large number of things having to be memorized, including numerous exceptions and special cases. Powerful concepts, by contrast, may be more

demanding to learn in the first place but each one mastered is a gain in itself, and in the end there is less to learn.

A language should not be just a means of addressing a computer; it should be an aid to thought. It is an admission of failure if it requires the user first to solve the problem and then to translate the solution into the computer language. It should not be necessary to derive formulae and ask the compiler to translate them into machine operations. Rather, it should be a language in which it is natural to think, and which helps the user solve problems.

The ideal computer language has not yet been invented, and probably never will be. The search for better languages has made the present decade one of changing fashions. The micro-community has moved from Basic to Pascal to C and still searches. Meanwhile, renewed attention has been given to Algol 68, a language whose merits are being increasingly recognized and which has been described as a great improvement on most of its successors.

Algol 68 is one of the most powerful computer languages, but has never been fashionable because it was formulated by an international committee thinking about how to address computers rather than by a computer firm which could give it strong commercial backing. As the name implies it was first promulgated in 1968, at which development continued and a definitive Revised Report was published during 1974-76. It is well known having been used extensively for advanced scientific work and in government research establishments. Many of the daring "new" features, fashionable languages prove to be more than special cases of something that was more general and powerful.

Algol 68 is more than just a collection of facilities. The way they are put together is vital, and a major contribution of Algol 68 is its demonstration of the extra power given to the user when the rules are clear and consistent without special cases.

All this may seem a long way from pupils making their first tentative strokes on a micro, but the link has been made by a new initiative in the compiler which is now available on micros such as IBM clones, Amstrad or Nimbus. This enables the pupil to start by keying

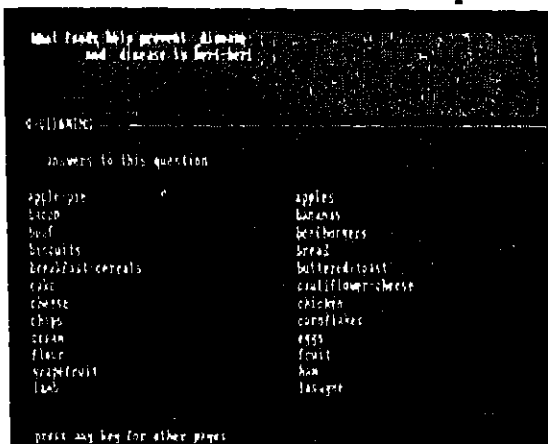
1 + 1 and since this is a valid Algol construction, the compiler will respond with "2". From there on pupils can quickly build up to more complicated arithmetic, generating "dom" sentences, writing a personal calendar, or whatever is needed.

Of course beginners would use only a small part of the facilities and power of Algol 68, but they would be starting on a language that could take them through to the most advanced users within their needs and talents. They would never need switch from nursery slope language to a more advanced one. It is possible to start as you think to go on.

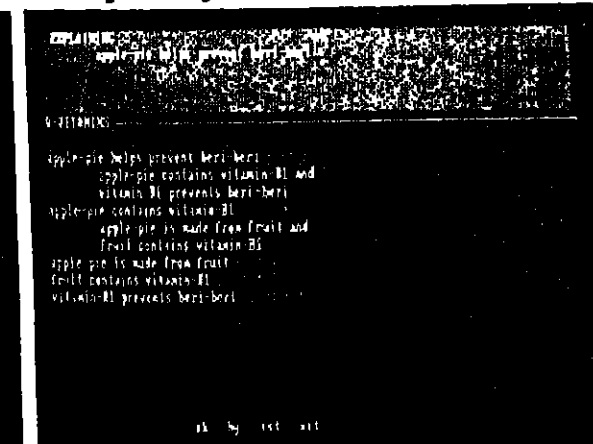
Peter Fellgett is Professor of Computing at the University of Reading.



A starter pack for expert systems



Picture 1



Picture 2

Prolog's tale

RICHARD ENNALS and JONATHAN BRIGGS

16-bit microcomputers), and in Kingston, developing a starter pack of expert systems tools for use in further education (for 16-bit microcomputers). In both cases the language used has been Prolog, but this does not need to concern the users, for whom "friendly" facilities are provided, including windows, menus and flexible styles of entering information.

ADEX-Advisor, for example, is a simple expert system shell designed for use in education. It allows advice systems to be developed quickly by students, lecturers and teachers. Selected knowledge or expertise is entered into the shell in the form of rules which ADEX-Advisor can then use to provide advice. It will ask the user questions to complete its knowledge, and once advice has been presented, the system can be asked to provide explanations.

It was decided to aim for simplicity in designing ADEX-Advisor. This would enable educational users to make a practical start, but not offer all the features of a large commercial system.

To use the system on Research Machines' Nimbus or an IBM PC-compatible computer, the user simply types "ADEX" and presses the Return key. The screen then appears with a menu of commands, which allow an existing program to be loaded with two keystrokes, one to select the command, and the second to select the program.

One system has been developed to give advice on Aids. It contains rules such as:

RULE 1
advice You should take precautions against getting aids if you are in a high risk group

RULE 2
you are in a high risk group if you are a gay man

RULE 3
you are in a high risk group if you have frequently changing sexual partners

RULE 4
you are in a high risk group if you suffer from haemophilia

RULE 5
advice You have no need to worry much about Aids if you are not in a high risk group

During the interaction the computer will ask questions such as "Is it true that you have frequently changing sexual partners (Y/N)?". It will then offer advice and explanations: "You should take precautions against getting Aids because you are in a high risk group".

Another system called XPOSE helps to diagnose faults in a central

heating system. The user is asked which symptoms apply in his case. He is then asked a series of questions, which the system will explain to him, to help in the diagnostic process. At the end of the consultation a remedy is suggested, with an explanation.

In many subject areas larger knowledge bases can provide a powerful and flexible educational resource. Judith Christian Carter, a former teacher of home economics, now information technology programme co-ordinator for the Council for Educational Technology, has developed a knowledge base for classroom use, concerned with vitamins and diet. Q Vitaminus, as it is called, contains certain rules, as shown in the chart below.

There is a problem, however, for the uninitiated user of a large knowledge base. In order to ask a useful question about the subject, one needs to know

the syntax of Prolog and how the knowledge has been structured in the base, the names and interconnections of the relationships. For this reason a new system was developed, Q, to provide easier access to the knowledge base and make it available as a classroom resource.

The aim is to find out what foods help prevent disease. In particular, the disease beri-beri (see picture 1 above). Having been given an extensive list of foods, we ask for an explanation as to why apple-pie prevents beri-beri (see picture 2).

Educational use of Prolog in the United Kingdom has proliferated through the activity of enthusiasts, as is evidenced by the growing collection of introductory texts, and the experimental use of expert system shells such as Xi, Xi-plus, APES, and ESP-Advisor, all written in Prolog. Schools

are of course frustrated by the lack of sufficient 16-bit microcomputers and of specially-commissioned educational software.

There is a more serious absence of funding for research and teaching, with the new generation of information technology in schools, teacher training colleges and universities, which should provide a sound base for progress. As was recognized by the report of the IT86 Committee, the opportunity is there to build on the advances of the Alvey Programme for education and training.

There is now a sufficient literature and range of commercially available software on educational microcomputers to enable individual teachers and schools to make use of Prolog, but there is no continuing external funding for centres such as Kingston and Exeter. If the plans of the Council for Educational Technology for a national programme supporting work on Intelligent Knowledge Based Systems for schools achieve Treasury funding, then the difficult task of development and dissemination can be placed on a proper footing. Otherwise the work will continue, but only with the financial support of overseas governments and companies, an increasingly familiar situation for British researchers.

Projects on Prolog have involved the Science and Research Engineering Council, Sinclair Research, Microelectronics Education Programme, Further Education Unit, Council for Educational Technology, Manpower Services Commission, Open Tech, Economic and Social Research Council and the Alvey Directorate. Projects have been established in the United States, France, Italy, Denmark, Norway, Sweden, Israel, Australia, New Zealand and Bulgaria.

Richard Ennals is Staff Development Officer at Kingston College of Further Education and author of *Beginning micro-Prolog* (Hemmann 1983), *Artificial Intelligence: Applications to Logical Reasoning and Historical Research* (John Wiley 1986).

Jonathan Briggs works at the Information Technology Development Unit at Kingston College.

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LEAs

Lincolnshire — one county's response to the demise of MEP

Initiatives

At least 75 per cent of the teaching profession and members of the general public could be forgiven for thinking that the catalytic Micros in Schools Scheme launched with such panache in 1980 has disappeared without trace. The demise of the computer magazines which no longer dominate the newsagents' shelf space also reflects this trend of a lowering technological profile, despite the real needs of our nation to become computer literate in a society increasingly dominated by the new technologies.

Lincolnshire is one shire county in this post-MEP period, in which activities that were largely triggered by the pump-priming initiative of the Microelectronics Education Programme are now in urgent need of further central government support if they are to effect curriculum change.

In many ways it has been disappointing that the Microelectronics Education Support Unit (MESU), the successor organization to MEP, has taken so long to come on stream to play its part on the national scene. Although, as a county inspector, I have attended several seminars and presentations to learn of the intentions of the new organization, it still appears to be keeping an irritatingly low profile. The activities and developments described in this article have, therefore, taken place at a local level, but helped through such national initiatives as the DTI Software Scheme.

In his opening address to the MAPE '87 Conference held at Newman College, Birmingham, Steve Bacon, computer adviser for Derbyshire, stressed the importance of developing a five-point package, the components of which local authorities, in partnership with central government, would need to develop in unison to avoid an imbalance. These five components — readily available hardware; quality software; i.e.a. support; INSET; and the provision of learning support services — are all part of the information technology package being developed in Lincolnshire. It is this attempt to integrate the technology into the curricular fabric of our schools that has made us realize the urgent need for



RON JONES

further help from central government agencies.

□ In such a large county, both geographically and in the number of schools it needs to support, the provision of "readily" available hardware has proved extremely difficult to achieve. Lincolnshire was among the first counties to standardize on the BBC micro, and in terms of technical and INSET support, this has proved to be a blessing. We were able to provide one complete system to every educational institution throughout the county, including colour monitor, disc drive and printer. For some 98 of our small and two-teacher schools this has meant one system between two classes, an aim that we would like to fulfil in all our schools. Indeed my long-term aim in the primary sector would be to have one workstation in every classroom to facilitate a policy of continuity, progression and integration.

We are very far from achieving that goal because of the enormous budgetary implications. We have, however, introduced a "matched funding

scheme, which enables secondary schools and the larger primary schools to receive additional support. Despite this, we still have a long way to go before the hardware is "readily available", and until that happens we can expect to see very little effect of the technology in terms of curriculum change. The proof of what can be achieved is in those schools where the senior management and staff's attitude to the use of the technology matches the available resources; then some exciting and innovative changes have resulted. The recently-announced Educational Support Grant could begin to make inroads into this problem which is presumably shared by most i.e.a.s throughout the country.

□ In terms of software support the initiatives that have resulted from the DTI Software Scheme have been very successful, almost to the point of eliminating the problem for the time being. In the primary school sector quality software was provided through the efforts of a group of seconded primary teachers meeting to interpret the

recommendations of the Elcott Pupils. This resulted in the creation of the Lincolnshire Primary Toolbox.

The box contains three sets of tools fitted into a curriculum map; Section 1, the "Foundation Toolbox", lists various areas of skills and divides them into three levels of difficulty. The software in this section is largely content-free. Section 2 contains software which is "curriculum related" and Section 3 contains teacher utilities such as a printer dump and a menu creator.

The box has proved extremely popular among secondary as well as primary schools for whom it was intended and is a good example of what can be achieved from the combined efforts of national initiatives and local support. The work of creating it was centred at MEDU, the Microelectronics Education Development Unit based at Bishop Grosseteste College, Lincoln — a teachers' support unit which is the key to most of the local initiatives. The hidden support contained in both the toolbox and the secondary schools' software scheme is the effort that the staff at MEDU have invested on behalf of schools in negotiating county software licences and processing bulk orders. This has greatly reduced the end-costs to schools and incidentally has established a trend for a most efficient and cost-effective software distribution system.

The schemes also revealed great gaps in the software market, for it was in this post-MEP period that many software houses went to the wall and their place has been taken by i.e.a.-initiated software which possibly lacks the marketing finesse of the publishing houses. Perhaps this is an arena that MESU would care to enter. Medusa is one i.e.a.-originated body that is supporting the needs of not only its own schools but also those in many other counties.

For the moment the software problem has almost been eliminated, but with the introduction of the next generation of computers based on 16 or 32-bit technology, the problem will return, despite the lessons we have learned of "user friendly" front ends and open-access tools. Schools will find it difficult to pay the commercial prices for the sophisticated suites and packages unless special educational discounts are negotiated — not by the efforts of individual i.e.a.s, but by the national level (another task for MESU?). Perhaps the ambitions of software houses like E2S (see page 74) will come to the rescue of education before the problem develops.

□ Then there is the third component in the information technology package — that of providing i.e.a. support to its schools. This support in Lincolnshire involves all strata of the authority, from the elected members through the director and his senior officers and the teachers in the schools, supported by a large majority of the parent body. The earlier drive for a computer-literate society certainly played a large part in securing this support. It has been translated into action through the release of funding for hardware and software support, for the creation of MEDU, for the provision of funding for INSET and the secondment of funding for curriculum workshops for the creation of classroom materials to support the available software and the creation of new software, where there was a need for such developments.

The i.e.a. has also vigorously pursued a policy of IT for all. In order to help the secondary schools come to terms with this concept the county issued a circular entitled "Information Technology — A Framework for Learning". This covers the type of IT course that is possible for pupils from 11 through to 16, and aims to integrate the use of the technology into the school curriculum. The document has been supported by seminars for headteachers, courses and some excellent classroom support materials, "Working with Computers", which have been devised by a team of secondary teachers and published by Medusa. Further materials are at the trial stage and will be made available to schools in time for the autumn term; these are cross-curricular and are based on problem solving.

□ A large measure of i.e.a. support must manifest itself in INSET in many forms. This has certainly been true here. MEDU has run over 100 courses in the last academic year. These have ranged from the very basic ABC (absolute beginner courses) to the specialist ones now demanded by the front runners. Every piece of sophisticated software introduced into the county requires the support of INSET if it is to be effective in the classroom. This is very expensive and time consuming. So in the primary sector we have established a "box school" system of some 10 schools which serve the needs of a cluster of schools within their vicinity. The "hosts" have had staff specially trained and have received extra resources to enable them to carry out their agreed responsibilities.

This shift from central provision has enabled us to introduce a Lincolnshire IT Certificate scheme to serve the needs of our teachers. It is offered at three levels. The advanced level includes a large element of pupils' work to match the developing skills of the teacher. The scheme is modular and skill-based. Although it is proving popular, it is bound to be affected by the new GRIST in-service training scheme. Perhaps when it has had time to settle down its effects will not be quite so dramatic.

As in many large counties serving the needs of a scattered population, it is important to distribute the available support as fairly as possible. We have, therefore, in partnership with Marconi and Ruston Gas Turbine, commissioned a Mobile Technology Unit based on a converted single decker bus given to the consortium by the Lincoln Roadcar Company. The unit is based at MEDU but works at locations around the county. It is proving an extremely valuable asset as cross provision moves towards school-based INSET.

□ The fifth and final component of the integrated IT package is the creation of quality resources to support learning. The creation of classroom support materials is important — either a company software or in which software can nest as one component in the learning materials. All the materials that has been produced by Medusa has resulted from teachers being seconded to curriculum workshops on the basis of either one day per week over an academic year or, in the case of primary teachers, fulltime for one term. In addition to MEDU, the county in partnership with a benevolent benefactor has created the purpose-built Brierley Languages Centre which is in the process of creating learning support materials but is getting towards the specific needs of modern languages.

Despite the declining public profile of information technology since the demise of MEP in spring 1986, the energy that was released by the initial pump-priming exercise has had an effect in more than one i.e.a. However, we are now in need of further help from central government agencies. I hope that MESU will emerge to begin to fill the vacuum left by MEP. It is vital to re-establish the partnership with i.e.a.s if the school needs are to be properly provisioned. A high public profile is again needed to establish in the minds of the general public, as well as of many teachers, the importance of information technology as an applications tool. The City was quick to learn; education awaits its "Big Bang" — and the necessary funds.

MAPE, Micros and Primary Education Details from MAPE Administration, 76 Holme Drive, Sudbrooke, Lincoln LA2 2SF (tel: 0522 754408) Lincolnshire Primary Toolbox, Details from MEDU, Bishop Grosseteste College, Newport, Lincoln (tel: 0522 44713) Medusa, MEDU Software Associates, Catalogue of resources available from MEDU.

IT Framework for Learning and Working with Computers: Teaching Pack Available from MEDU. E2S Ltd (European Education Software plc), 8/9 Bridge Street, Cambridge CB2 1UA. (tel: 0223 462200) The Brierley Languages Centre, St Georges School, Westholme, Westgate, Sleaford, Lincs (tel: 0529 302487)

Ron Jones is Education Inspector for Microelectronics in Lincolnshire; member of the MAPE executive; member of the Computer Association, Lincoln Group (CALG). The views expressed in this article are personal and not necessarily the views of the Lincolnshire LEA.

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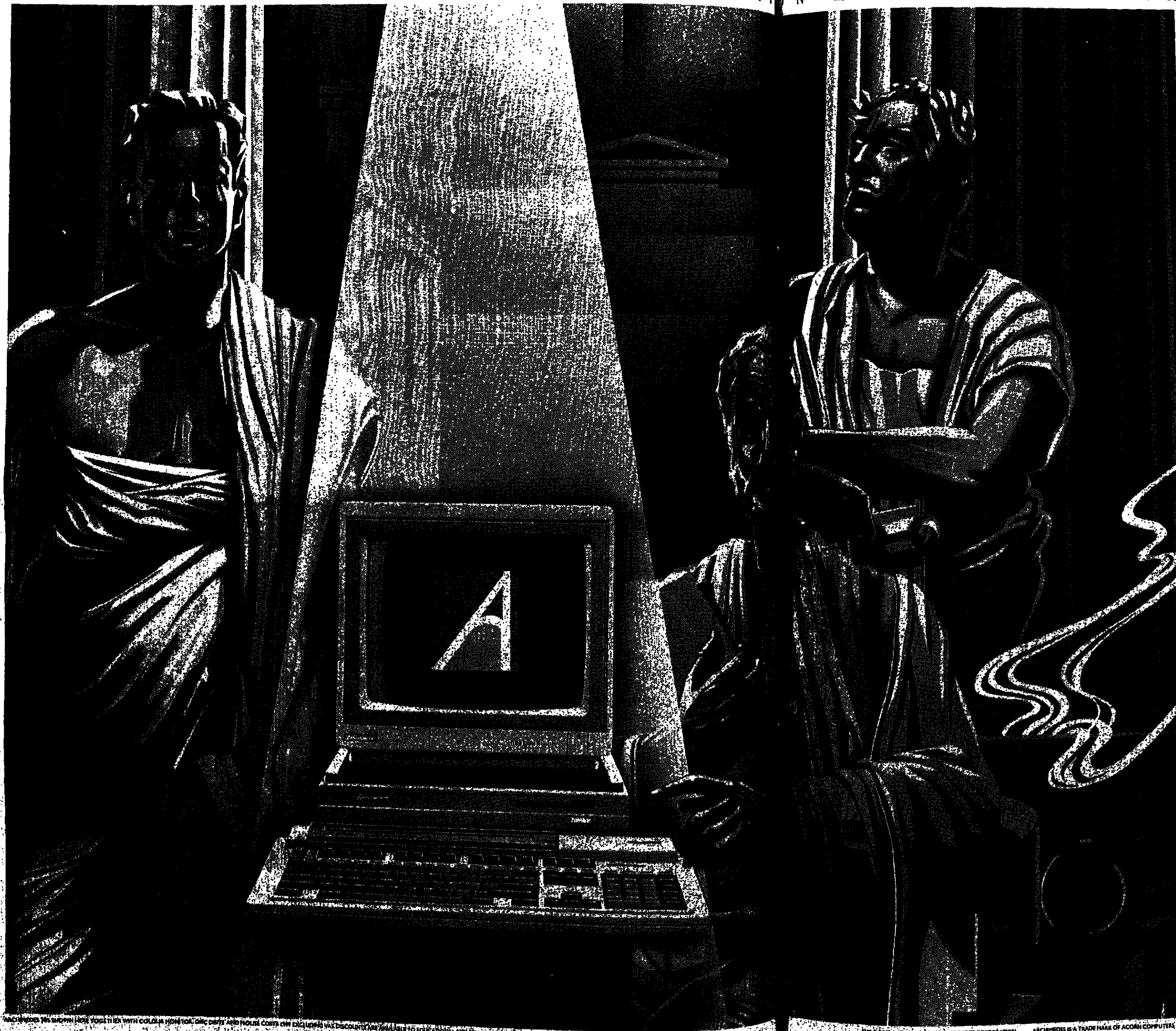
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LEAs

Staffordshire - the foundations are now in place



Rolling on

MICHAEL GRIME

Over the past five years Staffordshire has become increasingly well known for its efforts to ensure progress in the use of computers and information technology across the curriculum. Thousands of secondary pupils are being educated in schools which can provide a whole range of IT facilities. As teachers return from a rolling programme of in-service courses, they are bringing about change in content and new approaches to their teaching.

Throughout the county high schools are being encouraged to develop whole-school policies in relation to IT. As these are refined and presented, and as more staff are trained, phased development projects are providing hardware and software support.

In 1981 the Staffordshire pattern of computer provision was negligible. Worse still, the systems that were in use varied greatly in type and reliability and offered little scope for co-operation between schools. Our only college of education was to be closed, yet we had 9,000 teachers who ultimately would all need to be trained.

Fortunately our teachers were keen and prepared to work long and hard to make progress, and we had an education committee that was determined to support them. This made it possible to draw up a rolling development programme for the introduction and development of computers, microelectronics and information technology across the curriculum. The needs of all pupils between the ages of 5-18 were considered, so from the outset, this was a broadly-based, subject-free project. Another guiding philosophy was a recognition of the key role our existing teaching force would have in the 10 to 20-year process of change that was envisaged.

At the heart of our programme we created a team of advisory teachers, a multi-disciplinary group of imaginative and energetic men and women. Primary, special, middle and high schools were all represented. At a subject level we were able to represent history, CDT, maths, computer studies, science and geography. Effectively we intended to offer help and assistance to any teacher or school that wished to use the new technologies.

Indications are that computer/pupil ratios of 1:20/25 are necessary. Different numbers of variously-sized clusters of computers are being requested. One particularly active school offering 12 throughout the school may well require a computer resource area for 50 pupils, an electronic office for 20, an IT base for 10/12, an open access 15 further trolley-based systems scattered around the school.

In Staffordshire, as in many other places, a "round the school" network simplifies access to common software and data files. The new possibilities for communication between rooms or departments embody many of the basic principles of IT, as an electronic communications technology and offer the potential to "open" the learning environment.

Nineteen-eighty-four saw teams of subject teachers working as software evaluators, serviced by our advisory teachers and central software funding. The outcome was a "County Software Catalogue" containing qualitative evaluations based on classroom trials. This catalogue is provided to all Staffordshire schools and regularly updated. Any teacher in the county can save hours of effort by consulting it.

Now, in 1987, all pupils aged 11-14 follow a modular course called "Computer Appreciation and Information Technology For All". This used to occupy a recommended minimum of 75 hours, but recent authority-funded purchases of "Microelectronics For All" equipment now allow a supplementary 25-hour module. By the age of 14, all pupils should have developed basic skills, understanding and an awareness of the new technologies' potential. These courses are presented by a team of teachers drawn from across the spectrum of secondary departments for their enthusiasm and commitment.

From 14 upwards, pupils naturally opt to take a range of courses and modules, some of which need further access to computers and IT resources. A combination of resources, professional development and syllabus changes has ensured that the quality and relevance of courses has improved over the past few years.

Throughout the 11-18 phase all pupils can enjoy using computers as learning aids via simulations and other subject-specific software, as their teachers require. Most recently we are seeing them developing sufficient skills with word processors, information handlers and other content-free software to help them within school as well as beyond.

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existing networks and access it in any classroom through which the data cable passes. Pupils can gain access to a "geography" database from wherever they (or their teachers) can see a relevance for the data, perhaps in science. Business education is one of many subject areas that may, with a specific purpose in mind, download videodata pages or data from a remote computer; Prestel or our own county host are most used. Later this information can be incorporated into the school's local videodata system for anyone to access for information on careers or any other subject.

The considerable scope for further development in primary education is widely accepted. While the average provision of resources in primary is relatively low, a number of pioneering, research and development schools have almost one computer per class. The quality of work we are seeing from schools concentrating on a few powerful, content-free packages is a great encouragement for the future. The potential of children being allowed to grow with this new means of exploration and communication from the age of seven or eight, if not even younger, is exciting.

Nineteen-eighty-six/seven has been the worst year I have known for schools trying to recruit additional staff. Teachers with the necessary skills have simply ceased to be available in anything approaching adequate numbers. The consequence is that schools are even more dependent on developing new skills among their existing staff. Fortunately information technology has, since April, been designated a national priority training area for teachers and explicit funding has been made available under GRST. Early indications are that the DES have been too cautious, however, and many teachers will be disappointed in the current year because insufficient funding is available for teacher release and travel.

Exciting prospects lie ahead but these will only be achieved with continuing professional development and support as well as resources. The most recent DES news (page 49) of a further "significant" boost for IT in all the above key areas should hearten us all. The scheme should be flexible to allow the appointment of in-school non-teaching assistance too. Anything less than £200 million of local and national funds per year will not allow progress to be made at the pace our pupils and teachers deserve.

To date, it has been local opposition to national funding that has allowed Staffordshire to achieve so much in such a short time. The foundations are now in place and we have momentum to tackle future change with confidence. It will not be easy or cheap, but it will be a good investment.

Michael Grime is General County Inspector for Educational Computing and Information Technology in Staffordshire. The views expressed in this article are his personal views and not those of Staffordshire County Council.

SURVEYS

A report on micros in mathematics offers no room for complacency at the DES

A tale of two surveys

BARRY JONES and DAVID GREEN

The reports of two quite different surveys on the use of microcomputers in schools were published towards the end of 1986. The first was conducted by the DES in November 1985 and reported rather belatedly in December 1986 (Statistical Bulletin 18/86). The scope was wide-ranging and the sample comprised 500 primary schools and 500 secondary schools. Mathematics was only one area of the applications of micros which was considered.

The second was commissioned by the Mathematics Association subcommittee on "Using the Computer in the Secondary Mathematics Classroom" in the spring of 1986 and findings were published in *Mathematics in School* in November. This more limited survey was based on 52 secondary schools and looked only at mathematics usage of microcomputers.

In this article we have extracted the data from the DES survey which relates to mathematics and compared it to the results of the MA survey. Referring to the DES survey, the DES report states that "micros were most frequently used in mathematics departments, followed by computer studies departments; additionally some of the use in mathematics departments will have been for computer study purposes." The figures quoted for departmental use were mathematics 67 per cent, computer studies 58 per cent.

At first sight, the position with regard to mathematics seems to be a very healthy one. However, these global figures and further consideration gives a very different picture. There are two main points. The figure of 67 per cent for mathematics departmental usage agrees uncannily with the independent Mathematics Association's findings which also arrived at the same figure. However, the MA survey probed more deeply and the frequency of usage was:

Very often 6 per cent
Often 6 per cent
About once a week 15 per cent
Very rarely 39 per cent
Never 33 per cent

A different picture now starts to emerge. Only 12 per cent of departments in this sample used the micro more than once a week. If this is further sub-divided into use by individual teachers and classes, then the percentage is substantially reduced.

The DES figure of 58 per cent usage by computer studies caused us some amusement. Does it mean that there are some 42 per cent of schools where the computer studies department does not use microcomputers? We hope not.

Some schools will not offer computer studies as a subject at all, but others will do some under the umbrella of the mathematics department, thereby almost certainly diluting the DES's global figure of 67 per cent reported as "mathematical" usage.

Another significant finding from the MA survey was that very few computer teaching rooms (3 per cent) and a low number were movable (15 per cent). David Tall *et al.* calculated that there was approximately one computer for 1,000 pupils. Further, if these computers were totally dedicated all day and every day for pupils to do their own mathematical programming, this would give each pupil one hour's programming per year. (*Mathematics in School* 16, 1, 44-5).

Both the DES and the MA surveys addressed themselves to the way in which the micro was used in mathematics. This is an important consideration. As the Cockerott Report says, "the fact that a school possesses one, or several, microcomputers will not of itself improve the teaching of mathematics" (para. 404). The key statistics are shown in Tables 1 and 2.

In the MA survey most schools reported just a little pupil programming in Basic (60 per cent) and/or in Logo (42 per cent). The DES survey, however, reported that 10 per cent of schools reported that they used the micro for "problem solving" category involved



mathematical concepts. It seems reasonable to assume that some schools have included programming here.

The picture now becomes quite depressing. The two categories "Demonstrations" and "Investigations/Problem Solving" were the only usages for which the modal (and median) responses were as high as 2, ie "very rarely", all others being 1, ie "never".

If this is indicative of the way in which computers are being used, then it is no wonder that in the DES survey it is stated that "only 23 per cent of secondary schools' headteachers considered that micros had made a significant contribution to teaching."

One striking statistic from both surveys is the almost total lack of use of spreadsheets. These are the most common use of computers in business. Not only are micros not widely used in mathematics, but a high percentage of the little use there is, does not utilize the power of the computer.

The MA survey attempted to discern why this should be the case, and four common factors were reported: lack of software; lack of computers; syllabus constraints; and lack of training. A staggering 92 per cent of respondents felt that lack of software is a problem, 71 per cent seeing it as a serious difficulty.

We would question whether it really is the case that quality software is not available. We would suggest that in part teachers are unaware of its existence, or cannot afford it, or are unaware of its potential, and would benefit from in-service training more than they can imagine.

Interestingly, lack of training was seen as rather less of a problem (39 per cent considering it as a serious difficulty) but that may be a complacent attitude based on lack of awareness. On the issue of staff training in using micros, the DES survey reports that "the response rate from heads of department in secondary schools was low and the information reported on training only gave a broad indication of its extent." Only figures for primary schools are given in the DES Statistical Bulletin and the results for secondary schools are assumed to be "roughly comparable".

An evaluation was carried out by the education unit at Christ Church College on a short DES regional course organized at Bromley Curriculum Development Centre with participants from four different education authorities and four other London boroughs. At the outset most were by no means convinced of the value of micros in mathematics. A summary of their responses at the end of the course is given in Table 3.

Significantly, the evaluation highlighted that "14 participants mentioned specifically the value of seeing and using software. To this was added the opportunity to explore classroom uses of the programs and to hear experts' views."

In working on the Open University's "Educational Computing" course, teachers are reported to have shown a strong interest in actually trying out software in the company of someone experienced with the package. It is all too easy to miss the value of a computer pack with just a cursory inspection. The reluctance of new users of a package to study the accompanying documentation is well known (see page 73) and encourages them to study at least the most important sections can be provided on in-service

courses in a way not possible in the school situation.

Our fear is that the comforting figure of 67 per cent of mathematics departments using the micro will lead to misplaced complacency at the DES and within local authorities. Once a closer look is taken there is undoubtedly much cause for concern.

The DES discussion document "Mathematics from 5 to 16" had surprisingly little to say about the microcomputer. The national criteria for mathematics stipulate the use of calculators but do not mention microcomputers.

If Cockerott had been reporting today, it is certain that he would have had a great deal more to say about "maths and micros". Writing in the *New Scientist* in 1985, on "Does Mathematics Still Count?" he argued that a new Cockerott Report would read differently "in two respects... at least in emphasis. Since we reported, schools have introduced large numbers of microcomputers to their classrooms; and there has also been a major revision of our examination system at the age of 16-plus."

We started with the quote from the DES survey that "Micros were most frequently used in mathematics departments". If this is true, the position in other departments must be lamentable. We feel strongly that the DES survey could produce a misleading sense of security about the use of micros in mathematics. As the Fitzgerald Report on *New Technology and Mathematics* (1985) argued, "Not only are opportunities being missed, but there is also a danger that a considerable amount of time, mental and emotional energy is being wasted endeavouring to teach pupils outdated mathematical methods, while teachers have to neglect other methods that had already been adopted in the world of employment." Clearly mathematics teachers must face the challenge or suffer the consequence.

Barry Jones teaches at Christ Church College, Canterbury.

David Green teaches at Loughborough University.

Table 1

DES SURVEY: MICRO APPLICATIONS IN SECONDARY SCHOOLS

Percentage	Age of pupils					
	11-12	12-13	13-14	14-15	15-16	16-19
Using micros mainly for:						
Keyboard skills	6	8	8	9	5	4
Mathematical skills	30	23	10	10	9	8
Problem solving	22	16	28	19	16	8
Word processing	10	13	8	14	16	22
Databases	5	7	2	13	16	7
Spreadsheets	—	—	—	—	1	2
Simulations	9	10	20	20	18	37
Others	19	25	25	16	20	13
All schools using micros with the age group	100	100	100	100	100	100

Table 2

MA SURVEY: USES OF MICRO IN SECONDARY MATHEMATICS
Mean rating on scale 1 (never); 2 very rarely; 3 most weeks; 4 often; 5 very often

Usage Types	11-14	14-16	16-18
Demonstrations	1.8	1.9	2.2
Drill and practice	1.6	1.4	1.1
Investigations/problem solving	1.8	1.7	1.6
Spreadsheets	1.0	1.1	1.1
Programming by pupils	1.6	1.5	1.5

Table 3

EVALUATION OF A DES REGIONAL COURSE ON COMPUTER USAGE

	Number of responses	High	4	3	2	1
Course relevance to me personally	17	10	6	1	0	0
Course interest to me personally	17	10	5	2	0	0
Motivation to act on messages or content of course	17	9	7	0	0	0

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SURVEYS

Home computing—a route to status and respect for adolescents



Family failing?

PAUL HARTMANN, GRAHAM MURDOCK and PEGGY GRAHAM

Growing up with a computer in the house is becoming a familiar experience for many children and young people, though one still strongly marked by class.

The latest results from our continuing survey of Midlands' homes showed that only 22 per cent of school pupils with parents in semi- and unskilled manual jobs had access to a home computer, compared to 53 per cent of those with a parent in a professional or managerial job.

But having a micro within easy reach does not guarantee either sustained interest or competence. In half the homes in our sample, the initial enthusiasm had worn off and the computer was hardly used at all. Around 40 per cent used their machines more or less exclusively for playing games. Less than 10 per cent had become "creative" users who wrote their own programs or used word-processing and graphics packages to produce something of their own.

Money is part of the explanation. Many "creative" applications require a

machine that is more powerful and expensive than the more basic models, plus a printer and other add-ons. Not surprisingly, this kind of investment is largely confined to the better-off families. But this is not the whole story.

Over the past few months we have been trying to identify some of the other factors that make for "creative" engagement, by talking to young people and their parents about their experiences with home computers. Their accounts raise a number of questions that deserve closer investigation and debate.

Despite the spread of home micro ownership, it is clear that schools still play a key role in introducing pupils to computers. This sometimes happens in unexpected ways. One young man, now finished school, had spotted his first machine four years ago: "It actually belonged to a teacher. He bought it out of a newspaper and brought it to school. It was a ZX80. What really got me into it was that somebody nicked it, and I couldn't believe it. I was amazed that somebody had nicked a computer."

I could see that there was something really good about them." This experience motivated him to teach himself computing and he is now a sophisticated and committed user.

Pupils' experiences of schools' organized attempts to introduce them to computing were not always as positive, particularly where resources were limited. One bright young girl we spoke to was very keen to learn computing but was lucky to get a turn on the single machine in her primary school once a month and neither parent was in a position to teach her how to use the machine they had at home. The father was away and the mother lacked the time and knowledge to help her with even the most elementary operations, having, as she put it, "never met anyone who can explain how to use a computer or why they work". As a result, the girl was, for the time being at least, a computer dropout, and her initial interest was fading.

Contrast this with the case of two sisters at another primary school. Their enthusiasm had been fired by the school's after-school computer club and was strongly supported by their father who had bought a machine almost immediately. It had been in almost daily use for 18 months and had to be placed in a "neutral" area of the house, to stop them squabbling over access.

Family support does not always have a beneficial effect, however. At the secondary level in particular, parental worries about youth unemployment can combine with exam-oriented teaching to foster a purely instrumental attitude to computing. This squeezes out the qualities of playfulness, self-motivation and expressiveiveness needed for "creative" applications. One father, a skilled fitter, had been sold the idea that computing was the coming thing. He insisted that his daughter take it at O level, in the firm belief that this would secure her a job in banking. She complied dutifully but unenthusiastically and planned to sell her home equipment as soon as the examination was over.

Less directive parental support, on the other hand, may have more positive effects. Faced with the father's indifference, for example, one mother had set aside part of her wages to buy a micro that was compatible with the model her son used at school. She confessed it was all "double Dutch" to her, but was tremendously proud of his competence, and her admiration encouraged him to develop his skills further. Other cases of "creative" use included a boy who had written a program to make the weekly football pool selections for his father and another who had won a bet with a sceptical father that he could make the computer solve anagrams.

In each case, computing had given these teenagers status and respect within the family. It also provided an area of independence and autonomy which their parents acknowledged but did not seek to control or pre-empt. One mother compared it to her use of reading: "He comes in at night and he goes on long studying for his exams and then he's up there. It's like me and I mean, I'm a bookworm. They can talk to me and it's mine, mine, you know, sometimes, because I'm wrapped up in a book, so it's the same sort of thing. Using computing to win personal and psychological space within the family may well be an important part of their attraction for at least some adolescents."

In addition, it can also provide a basis for new friendships. As one father recounted, "some of his friends from school have got Amstrads and they've got him to get to know them, if you like, purely he's got an Amstrad and they've got something in common". Access to a network of like-minded users, in turn, plays an important role in sustaining interest by providing a ready pool of advice and help.

Although our research still has some way to go, the results so far suggest that home computing fulfils a variety of functions for young people, both inside and outside the family. School-based programs need to take account of these findings and to find ways of building on them to encourage more adolescents to become "creative" computer users, rather than just consumers of pre-packaged software.

The research reported here was supported by Central Independent Television and the Research Board of Lancaster University.

A call for illumination
Primary practice

GARY HEYWOOD

It may have been more surprising and illuminating for government officials and civil servants than for teachers to read research reports of computers being absorbed into primary school practice too slowly (Bleach 1986) or piecemeal (Becker 1983), but only recently has direct attention been paid to the preconditions for computer implementation.

This has been one of the interests of an ESRC-funded research project in the Department of Educational Research at the University of Lancaster. It was felt here that a primary teacher's existing classroom practice may determine non-use or particular use of the computer.

Does the choice of software faithfully mirror experience in the classroom off the computer, or does it qualitatively change current instructional experiences with novel learning environments? Answers to such questions would suggest which teachers in which settings positively developed the "deep structures" of learning and which "innovated" without anything fundamentally changing at all.

These issues demanded comprehensive case studies of primary school practice both with and without the computer. Teachers working in five junior schools in a London borough between 1984 and 1986 were therefore exhaustively studied by questionnaire, interview and classroom observation.

Children's experiences at the computer varied from one school to another, but significantly, a pattern emerged which reflected instructional priorities in classrooms throughout each school with and without the computer. The table below shows computer use in all the schools to be largely concentrated in one application — drills.

These were generally maths drills, but there was also some evidence of language drills as well. Where there did occur evidence of movement away from drills, it happened in schools B and D. This was interesting in terms of each school's existing climate of instruction. Schools B and D were open and semi-open plan. Schools A, C and E were older schools with closed and discrete classroom spaces.

Observations and teachers' attitudes in interview tended to suggest that this physical (and supposedly accompanying ideological) difference between the schools made a difference to the relative teaching and learning. Certain aspects of the more formal schools (A, C and E) determined teachers' propensities to individualize instruction, to deal in facts rather than skills and to interact by question and answer. In the more open schools (B and D), there was evidence of a commitment to group work and dialogue and more emphasis on skills.

The fact that the computer tended to reflect these existing off-computer strategies, at least in the early stages of implementation, should be an important consideration for those proposing innovation.

The table suggests that where use did occur in these junior schools, it tended, in educational terms, to be narrowly conceived. It would, however, be a mistake to think that all teachers were avidly using the technology or even relying on it as a regular basis. Many were not using it at all. Interviews with teachers and heads revealed three levels of resistance:

- Individual Resistance: No time to understand it. Too little INSET. A fear of technology. A fear of change. Depersonalized teaching.

- Organizational Resistance: No inter-school support. No head teacher support. No post-holder support. Poor C.A.L. curriculum links. Poor I.C.T. support.
- The Innovation Itself: Not enough computers. No appropriate software. Machine breakdown.

Overall clarity about computer, material and personal support, and time to assess individually the costs and benefits of computer-assisted learning were felt by teachers to be missing.

Interestingly, many commented formally that the computer represented to them an alien approach to teaching. They therefore claimed the "databases and simulations are too progressive" (A, C and E), or felt the computers in the classroom represented a depersonalization of school activities and a return to traditional teaching styles (B and D).

Both sets of teachers resisted computer assisted learning on grounds that were essentially conflicting but justified within their existing context. In both cases, to perceive it in such exclusively determinate ways was to misrepresent its range of possibilities.

Other factors associated with the schools' attempts at implementing INSET were also taken into account. INSET attendance, leadership characteristics, the ages of the staff, decision-making processes within the school etc. Each of these tells more about implementation and innovation than they are seen in context. So, school A, 100 per cent staff attendance at the C.A.L. in-service course (plus this school workshop) was no guarantee that computer use would be any more frequent or "open" than at school D, where only 18 per cent of the teaching staff had attended a course. Similarly with leadership, school E's thriving and dynamic head teacher did not reap the rewards that he anticipated from his undoubted energies and dynamism. Equally, a young staff was no surety of innovativeness and change. Rather, all of these factors, and a awareness of them, contributed to a school's proclivities to innovation and, in this case, to using the microcomputer with confidence and positive curiosity.

Teachers disengaged from, or unclear about their on-going activities away from the computer cannot be expected to access potentially revolutionary micro applications with any degree of confidence. The prospect is more likely to be confusion and alienation. The "meaning" of a teacher's educational activity must be clear before the possibilities, costs and benefits of change can be evaluated and then fairly adopted or rejected. The concept of either "Rogers' latches" by way of increased INSET provision, more computers or a push from the head teacher will be too slow for those hoping for technology's rapid deployment across the curriculum of the primary school. Before that can happen, teachers must clarify the meaning of their own practice. This is not a call for introspection, but for theory outside practice, but for the illumination of practice by theory, and vice versa, so that the preconditions for evaluating innovations, C.A.L. or any other, become clear, teachers will merely be subject to the persuasive power of developers and a dubious technological imperative.

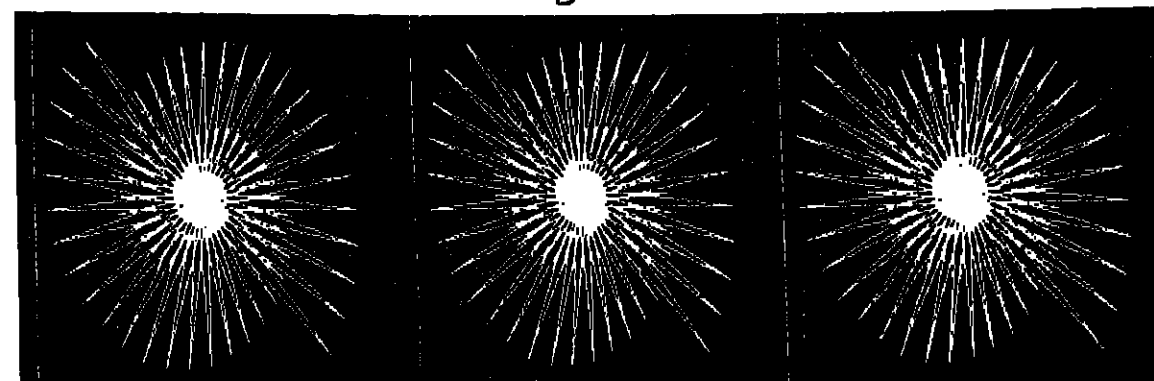
Gary Heywood works at the Department of Educational Research, University of Lancaster.

THE CASE SCHOOLS' USE OF THE COMPUTER
as percentages of observed computer use over the period

	Drills	Databases	Problem solving	Adventure games	Simulation
School A	100	0	0	0	0
School B	100	11	25	0	0
School C	100	0	0	0	0
School D	100	0	0	0	0
School E	100	0	0	0	0

PROJECTS

Teacher training for micro worlds



Bumping into ideas

RICHARD NOSS, ROSAMUND SUTHERLAND and CELIA HOYLES

Considerable resources have been spent on equipping both primary and secondary schools with computer hardware and, to a much lesser extent, on software. It has become clear that even the very best software cannot stand by itself; research and classroom experience have confirmed that the teacher assumes a critical role in children's computer-based activities — one which may differ in a number of important respects from that traditionally adopted.

In the secondary mathematics classroom, there has, until recently, been a dearth of good software. Much of what was available has consisted of practice programs which focus on isolated pieces of mathematical content (how to solve an equation, practising coordinates etc.), or games of varying degrees of mathematical and educational value. In addition, a proportion of this software is teacher-driven — the focus is not on giving the learner an intellectual tool but on providing an enhanced technology for the teacher to transmit knowledge.

For the past eight months, the Institute of Education has been trying out an experiment in teacher education. We have been running a course (30 days over the year) for secondary mathematics teachers, designed to help them, and ultimately their pupils, to realize the potential of the computer for mathematics.

The course is not built around the idea of giving or training teachers to carry out some pre-conceived approach. We are trying not to set ourselves up as "experts" and we are very much aware that in the area of computing there is a high degree of hype, much of which is designed explicitly to deter the novice from challenging the expert's expertise. There is still much to be learned about the ways in which the computer may change the nature of children's learning; and so we try to adopt an approach on the course and use materials which model the way we would like to encourage teachers to use the computer in their classrooms. We have noticed, for example, that most of the materials we have used on the course have ended up being used by them in their own schools.

The second feature of the course arises from our belief that the most fruitful use of the computer in schools will be based on "application" software in an educational context. We mean application software, we mean multi-media (sometimes misleadingly called "content-free") programs which offer the learner/user an extension of his or her thinking. Examples include a programming language, a spreadsheet, database package, and a graph-

drawing program. These are tools which make devising and refining problems and their solutions easier. Of course, the tools need to be appropriate for the job, and there is a wide range of quality to choose from. For example, the programming language we have used has been Logo — a flexible and learnable language derived from Lisp, the language of artificial intelligence. With Logo the participants have been able to program in a very sophisticated way, despite starting from a situation in which many of them were clearly frightened of getting started with their computer.

The course is designed around the teachers' first becoming confident in using the software for themselves and then using and evaluating it in their classrooms. During the course the

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teachers negotiate among themselves the area of mathematics for which they think the software is appropriate. These two factors together imply that much of the course is based on "hands-on" activity, learning by doing; and on discussion and evaluation of their work by testing it on each other and in their classrooms.

One aspect of application software is that most of it was not designed with education in mind. On the contrary, it has been the commercial market which has given rise to much of the most imaginative and powerful software available. Our aim in the course is to harness this power for the classroom. Doing this is a job for teachers (not software designers), and we hope to put participants in the position of designing "Microworlds" based on

software (either one or several purchases), i.e. learning environments (based on the computer) in which the learner can bump into interesting and important mathematical ideas while engaging in meaningful problem solving.

A starting point in the design of these Microworlds, has been mathematics and the ways in which pupils commonly misconceive mathematical ideas. At this point, about two thirds of the way through the course, the teachers themselves are in the process of carefully evaluating their (and each other's) Microworlds in their classrooms. The Microworlds so far developed concern vectors, angle, limits and π scaling.

Alongside the course itself, there is a research component which has been funded by the Economic and Social Research Council, to evaluate both the course's effectiveness and, in conjunction with the participants, the Microworlds developed on the course. We have visited the teachers in their classrooms, and have attempted to build up a picture of their attitudes and approach by interviewing and observation. Finally, we are hoping that over the next two-and-a-half years, we will be able to watch and document the process by which knowledge and use of the computer is disseminated within the mathematics departments of the participants' schools.

Anyone interested in next year's course (October 1987 – June 1988) should contact us at the Department of Mathematics, Statistics and Computing, University of London Institute of Education, 20 Bedford Way, London WC1.

Richard Noss, Rosamund Sutherland and Celia Hoyles teach in the Department of Mathematics, Statistics and Computing at the University of London Institute of Education.

Expert ease

SALLY TWEDDLE

A sparsely furnished office on the first floor of Birmingham's Aston Science Park. A man and a woman contemplate a computer screen. The computer is working cost £50,000, but they are developing a program to run on a Nimbus. The man is a director of a newly-formed company called ETCS and has considerable experience in development of computer systems for use in industry. The woman is an English teacher. Both are working for Birmingham Education Authority.

This unorthodox combination of educationalist and industrialist, computer with hundreds of megabytes and computer with only a fraction of this, of English teaching and the new technology has been brought about through TVET funding of a project which evolved from Birmingham's English and the Miers Group.

The project is a co-operative venture in which Chris Carlisle, Director of ETCS (Education, Training and Consultancy Services), is working with a team of teachers from Queensbridge Secondary School and Joseph Chamberlain Sixth Form College. They are developing an expert system on playground sitting and design.

Expert systems are only just beginning to find their way into the field of education where, many are exploring their potential in the areas of training and diagnosis. The main thrust of the Birmingham project, however, is to exploit the distinctive nature of the expert system by developing programs which will run on the Nimbus machine, but which will be significantly more flexible than any which have been programmed in the traditional way because teachers will be able to adapt them to their own particular needs.

The original version of Playground sitting and design was developed using traditional means, by the end of which time the possibility of improving on it with a substantial revision had emerged. The improved version, developed as an expert system, was ready in pilot within four months. Any teachers that become necessary as training progresses will take a matter

of days to implement — and this will involve no programming.

The cost-effectiveness of this means of development is only one of the advantages; the sophistication of the systems with which we are dealing is the other. The ability to "reason" using rules defined by the experts, in this case, teachers, the speed of operation, the high quality of screen display and the range of options available for presenting information combine to produce a friendly, interactive software. The teachers, selected from subject areas to which Playground could contribute — namely CDT, maths, humanities, business studies and Information Technology — have had varying degrees of experience with computers. One has never used them before, while two are network managers in their schools. Having agreed to come to the initial session almost as an act of faith, they found themselves being launched into a world of possibilities they had never dreamed of. To each of the teachers' queries, "Could it handle investment and project appraisals?" "Can we use it for printed circuit board design?" the answer was yes.

Apart from all the obvious applications of expert systems, one of the team's concerns has been to exploit their potential in the creative and expressive areas of the curriculum. The value of the computer as a dynamic focus for group talk makes it an invaluable resource in English and drama. We are concerned to ensure that among other things pupils are stimulated to explore their own experiences and feelings and to approach the problems they are faced with creatively and imaginatively.

In order to ensure that this can happen, we have had to make the system we are using work in a way that was not envisaged by its designers. This is precisely what should be happening in software development. The key is to know what we want and to remain in charge. It is, after all, how they work in industry.

It has been a salutary experience to see the matter-of-fact way in which industrialists accept technology that fills teachers with wonderment. Several people from the world outside education have come across the project and have had to reconsider their ideas about what happens in the classroom. To them the notion of using computers to teach English is difficult enough to accept; that teachers should be involved at such an early stage in exploring what is still relatively new technology is even more surprising.

Sally Tweddle is an English teacher at Queensbridge School, currently on secondment to Birmingham University.

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PROJECTS

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DIY

MARTIN WHITE

A few weeks ago our Domesday equipment arrived. We set it up and watched with interest as a number of colleagues spent all their spare time (and some that wasn't) finding out what it was about. There were the inevitable comments - "It'll take for ever to find out everything it will do" and "what a pity they left the spelling mistakes in." All agreed that it was the most exciting buy for a long time.

And then a visitor to the faculty, who had persuaded us that he would like to play with it too, asked: "How can I make it do what I want and not what other people have told it to do?" He departed disappointed.

Microcomputers have been with us in the classroom long enough for us to see a significant change in their method of use and in the types of software that are now demanded. Gone (thank goodness) are the drill and practice routines and even some of the simulations. The present is now on open-ended software which can be tailored by the user for his or her own purposes.

It seems that as with microcomputers, so now with interactive video, we are in that early stage where we accept and use with thanks whatever is put before us. This is not in any sense to deny the excellent work which has gone into Domesday, but it is a fact that its video content and control software are fixed beyond alteration. There is, however, another consideration: apart from the university across the road, how far do teachers need to travel to the next Domesday installation?

When considering how best to make interactive video generally available, two questions pose themselves. Given the cost of a disc-based system, is there any way in which teachers can experience interactive video in the classroom? And second and perhaps more important, is there any way in which teachers can make their own interactive video programmes? We believe that Brighton Polytechnic is providing positive answers to both questions by virtue of the *Telsof* system we have developed.

We began about 18 months ago from the position which schools were at - and particularly, because we are a faculty heavily concerned with training for the primary sector, where primary schools were at. That is to say we took the equipment and expertise available to us and developed a simple tape-based interactive video facility which uses a BBC micro and a domestic VHS video recorder. We argued that what

the system would lose in speed and random access would be more than made up by the saving in cost and the ability to use existing video material or that provided by the user.

The interface which we have developed, and which is fitted into a video recorder, allows the micro to read the tape counter and to operate all the tape transport mechanisms under keyboard or software control. The display of successive images from video tape or computer can be pre-programmed and account taken of the response to computer-generated questions or discussion starters in determining the sequence in which they are presented to the user.

Experiments have shown that, provided there is something presented to involve the user, the search time for the next piece of video material is relatively unimportant. In any case, careful design can enable a likely sequence of video segments to be placed together on the tape, so access time is minimal.

There can be no random access with a linear system such as this. With the domestic VCRs which we use there is a certain amount of tape slip and there is no second audio track for control purposes. We use the tape counter for rough positioning and audio pulses for exact cueing. It works.

The simplest configuration uses two screens - which, surprisingly, some people prefer. For our work we use a single monitor with switchable RGB/ composite video inputs controlled from the micro. The present system does not provide overlay of computer text on video but the next series of systems will.

The *Telsof* interface fits inside the VCR and can be installed by a competent technician following the step-by-step instructions and using the test software provided.

Many teachers using the system for their own programmes make use of existing video material which they have recorded off air or have purchased. The use of a computer to stop and start a VCR or to arrange to play a tape in a different order from what was originally intended does not violate copyright. The re-recording of a tape in order to alter the video content in some way is contrary to copyright and permission must be obtained before this is undertaken. Most copyright holders will allow this for research or experimental purposes, often without charge, but it is important to ask first. No matter which system is being used, the design of an IV programme is first of all a paper exercise. Putting the theory into practice is carried out by means of an authoring package. In our case one specially developed for the *Telsof* system which requires no computer programming knowledge. The user is only required to fill in a series of forms on the screen by putting in answers to questions concerning the structure and content of the programme.

Designing computer screens can be a frustrating time-wasting exercise depending on your personal viewpoint. The *Telsof* authoring package contains a sophisticated screen editor system which allows text to be written in single, double or triple-height characters and moved around on the screen. There are facilities for pixel editing and for windowing. A comprehensive editing program allows for changes to be made and for a new file of screens to be made from existing files. A good, effective screen does not have to be recreated for each programme.

The system can provide up to nine title or introductory screens before the first video sequence appears, and question screens or discussion screens into which the user's summary of a discussion can be input and stored. Help screens can be called up when a user makes a wrong decision, and message screens to give instructions or comments. For those who wish to be more adventurous, a series of commands will shortly be available from ROM, which will allow even greater flexibility in programme design.

All this is made interactive with one further facility in the authoring package which takes all the files, combines them with the control software and automatically produces a master control program complete with its own IBMOT file.

Over 30 secondary teachers gathered at Oxford recently found the experience of designing, producing and testing their own IV programmes a fascinating experience. The process by which IV is made lends itself to group discussion and has already been shown to stimulate and motivate in the classroom. Groups as diverse as upper juniors and sixth formers work together in design, production and evaluation of their own programmes.

Existing and much-used video materials can be given a new lease of life by the addition of questions and discussion starters. Pupils can often view the programmes on their own since responses from up to 20 different users of a programme can be stored automatically and, by means of a review program, can be analysed by the teacher at a later date. The software is such that the tape is rewound and the computer reset for the next pupil after each use.

It is also possible without much effort to produce one's own video material by means of a home video camera plugged into the VCR. Children in two primary schools have done just this and made programmes about a nature trail and a day trip. The design and production of the interactive material has been carried out by the pupils in each case.

The major use for the *Telsof* system at the moment is to provide inservice training material in TVET. The Manpower Services Commission have provided funding through TRIST for the production of packages intended for use in the extension programme just beginning. Interactive video packages consisting of video tape, software and print materials are being produced on "What is TVET?", "Profiling", and "Counselling".

Education authorities in East and West Sussex, Croydon, Sandwell, and Clwyd are co-operating with the team at Brighton Polytechnic in providing evaluation feedback and in some cases making video materials for the specially-made video masters. Following this, the packages will be available for general release later this year. They are designed for use in school by groups of teachers or by individuals and are intended to stimulate discussion on the implementation of TVET rather than present answers.

Undoubtedly the ability to record on to video disc will be developed sooner or later and with it the possibility of producing sophisticated IV packages in school. In the meantime, this cheap, simple, do-it-yourself system can provide the experience of designing, making and using interactive video.

The *Telsof* project acknowledges support from MSC through TRIST and from the Faculty of Education and Learning Resources at Brighton Polytechnic and the Media Services Unit at the University of Sussex. Further information about the project and on the supply of *Telsof* systems should be addressed to The *Telsof* Project, Faculty of Education, Brighton Polytechnic, Brighton BN1 9TH (tel: 0273 606222).

Martin White is principal lecturer in the Faculty of Education, Brighton Polytechnic and is also a member of the TRIST team.

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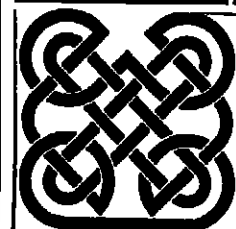
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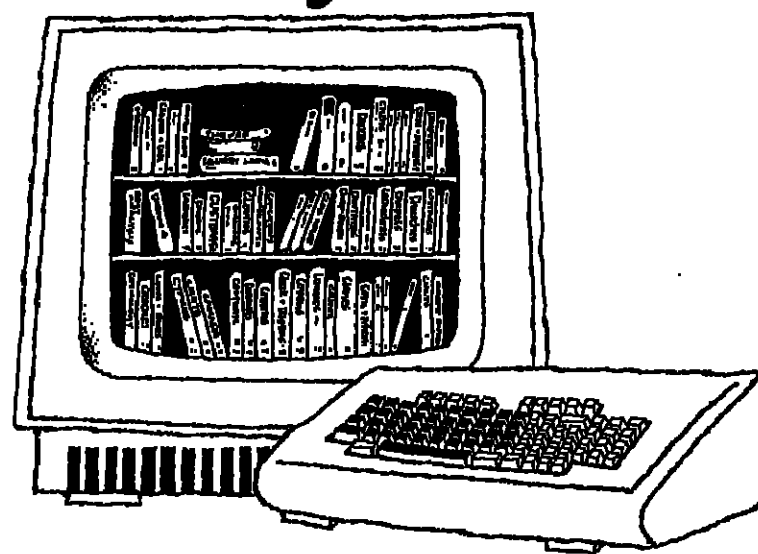
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PROJECTS

A school resource, information and communication centre

Meeting today's needs



PAUL McGEE

With the introduction of GCSE and the consequent emphasis on resource-based learning, there is a great cry of "Where are the resources?" In many cases they already exist, hidden in particular departments or in inadequately catalogued school libraries. What is needed now are the systems which allow pupils direct access to them.

For years there has been a call to improve school libraries, but this has been the 19th-century one, based on the idea of "a place where the working man can improve himself by reading". The growing power of low-cost microcomputers and an imaginative collaboration between education and industry might provide a catalyst for a new type of resource centre to meet today's needs.

In 1984 IBM set up the "IBM PC in Schools Programme" to explore the potential for using business micros in schools, both for administration and in the classroom. One part of that, "The London PC as a Whole School Resource Project", looked at non-classroom uses, including libraries and resource centres. The project was based in Croydon, under the direction of Brian Newlands, but also involved ILEA and Hounslow. One secondary school and three resource centres agreed to investigate computerizing library and media resources catalogues.

The idea was not new and many Croydon schools had experimented with the SIA programs from the British Library. These proved excellent at giving pupils experience of looking at bibliographic records, but the Research Machines 3802s, on which the programs ran, were too slow and held too little data to cope with the demands of a typical secondary school. IBM's provision of 16-bit PCs meant that realistic power and storage capacity were available; what was needed was appropriate software.

In 1984, at the beginning of the project, there were very few packages to choose from, and most of these were designed for much richer research establishments. Cost was a significant factor because the chosen system, if successful, would eventually be made available to all Croydon secondary schools. For the same reason, other packages were rejected which had been tailored too closely to specific needs.

The final choice was a mixture of *Imagic*, a retrieval program, and *Headset*, a package which combined the editing capabilities of a word processor with the field structures used by *Imagic*. The suppliers were Head

Computers in Oxley, Surrey, whose close proximity helped cement a very productive and mutually-beneficial working relationship. Additional factors were the speed of indexing and retrieval and the variable and recurring length fields which removed difficulties with long titles or records with extreme differences in the number of keywords. The ease and power of searching was also important, as was the ability to transfer data to and from other databases and to control the format of data displayed or printed.

The next stage was to create trial catalogues. Experience had shown that pupils did not find the Dewey decimal system easy to use, partly because there always seemed to be disagreements about where books should be allocated. However, since most libraries are organized around it, it would have to feature.

Trial databases were set up for various disciplines to find out what would have to be included in a standard format. This was a frustrating period as no real cataloguing was

taking place, and decisions always seemed to depend on what someone else wanted. However, as in so much computerization, time invested at the planning stage was fully repaid.

Croydon now has standards which cover not only the fields to be used, but also specific codes for media types and locations. This has proved immensely valuable as other databases, such as science and RE resources, are now in the slow and careful process of being catalogued. It will also enable future users to make use of existing catalogues and simplify moves towards centralized book selection or cataloguing.

Book records include the basic bibliographic details of author, title, publisher, Dewey classification and accession number. The more difficult part is assigning keywords, including those for subject. This splits into two levels, the first in terms of broad classifications such as chemistry or geography, and the second in terms of specific topics covered in the book, eg mammals or farming.

All of the design considerations become important when the database has to be searched. Because of their involvement with the project, Head Computers have greatly improved the system. As well as the command-driven searching facilities, which use the boolean logic operators AND, OR and NOT, there is a menu-driven interface for *Imagic*. Many pupils found command-driven searching too difficult. This package, called *Headmost*, allows most types of application to be specified by a fairly simple set of parameters.

The Croydon system currently has a quick word search and set searching. The quick word search allows the user to select a field, eg author, title or keyword, and then enter the required word. The program will rapidly report how many items have been found and start to display them on the screen. Set searching offers similar access but allows the user to broaden or narrow the search by selecting options from the menu. It also provides a greater range of output options which are serving for the more experienced user, the command searching facilities.

Head Computers will develop their products further, for both the educational and commercial markets. They will develop *Headmost* to make it even faster and easier to use. In doing so, they will build upon work they have done for a publisher who wanted a directory on a disc, which was readily usable by engineers, managers and secretaries. This shows the benefit to education of concentrating on standard industrial and commercial products which attract development funding not available to education.

Croydon is also preparing a TRIST project to extend the scheme to another six schools, a further six will be introduced to it in the coming year. The computer used is not the IBM PC but the 20-megabyte, hard-disc, RM Nimbus, but as both use the industry-standard MS-DOS operating system, there have been no difficulties in transferring data or programs. These, in conjunction with other national developments, are bringing new life to school libraries.

With the Department of Industry's support for modern schools are able to access, through Prestel, The Times Network System, an ever increasing number of databases and bring closer the day when school libraries can be School Resource, Information and Communication Centres. Local authorities can also make original data about their own locality available through local bulletin boards or their own mainframe computers,

and they can arrange to share data with other local authorities or groups with whom they work on curriculum development.

As it is stored electronically, data can be investigated in a variety of ways. It will no longer be necessary to staff to provide data which fits the theory as pupils will be able to extract their own. As the teacher becomes more a manager of the pupils' learning, the pupils need a wide range of study skills if they are to have the confidence to exploit the technology and explore further afield.

Such skills have to be acquired and developed by regular use. This is easy in many school libraries where resources, often only books, are poorly catalogued and frequently contain material which is woefully out of date. Nor is it surprising when so many libraries are run as an adjunct to the English department, with no trained librarian and open for only a limited time. Reference sections are not very supportive of the curriculum and as a result each department keeps its own resources. This often means they are under-used and makes cross-curriculum work much more difficult. The prominence given to the introduction of GCSE means that the question of proper staffing, resourcing and use of school libraries is now thankfully high on the agenda.

There are many additional benefits of having a computer in the library. Pupils see the computer and are enthusiastic to use it, which in its turn leads to their greater involvement with the library. As their own information gathering and handling skills increase, they find more than ever that the library has to be properly resourced. This then has implications for the senior management team of a school or college.

Croydon is in a good position to face these difficult questions as a result of its involvement in the IBM project. It has gained much from IBM's generosity and moral support, and from the close co-operation with Head Computers. The next stages are the gradual training of teachers and the creation of sufficient databases to make the whole activity viable for pupils in most subject areas.

Head Computers, The Old Mill, Sandy Lane, Oxley, Surrey (tel: 088371765). Brian Newlands, Adviser for Payment and Social Education, Davidson Cars, Davidson Road, Croydon CR0 6DD (tel: 01-655 1239).

Paul McGee is chief inspector for computing in Croydon.

The pervasive effect

PAUL McGEE

A Complete GCSE Computer Studies. By Martin Amor and John Fairhurst. Stanley Thomas £5.95. 0 85950 244 9.

The introduction of GCSE has led to changes in computer studies which necessitate changes in the type of learning materials needed. It is doubtful if this one textbook could live up to its very ambitious title.

Nearly 500 pages long, it is divided into five sections. The first, quite brief, is an overview which establishes the theme of the pervasive effect of computers, and introduces the idea of a computer system. Less helpfully, it sets the trend of ending each chapter with a list of "jargon" introduced.

The second section, on communicating with the computer, has chapters which cover good programs, types of software, input, output and storage. The material is thorough and clearly presented, but 35 pages on programming so early in the book gives a misleading impression about GCSE Computer Studies, particularly as all other types of software are dealt with in 10 pages.

The section on information systems is coherent and deals with types of system, in the sense of hardware, eg micro, mini and mainframe, followed by developing systems which now refers to the complete information system. These chapters are followed by one on files, which contains the normal confusion between file organization and file access, and one on reliability and security.

The next section occupies 200 pages and is about computers in action. It covers a good spread of applications and implications of computers very much in line with GCSE. Those covered are recording distribution, office computing (including payroll), the electronic office, shops, libraries, banks, schools, simulations (including spreadsheets), control, serving the public, and the changing society. Each chapter introduces the topic, but usually not in enough detail for the average student to derive the information processing requirements of the system, and explains something of the working of the system. The better ones use the application to raise appropriate questions about the implications of computerized systems.

The last section, "Inside the CPU", covers the detailed work on binary and logic which has become much less important. This gives the book a good overall balance in covering the material for objectives C, D and E of the national criteria. It is less good at drawing out the general principles of how computers are used to solve problems as defined in Objective A, and does not tackle the project work. The title is misleading because this sort of book could not attempt to meet the requirements of objective B, ie to use computers sensibly to solve appropriate problems. To do this, candidates must be given the necessary practical experience in programming, word processing, spreadsheets, databases and other software packages, as well as learning some general approaches to using computers to solve problems from the study of applications.

Greater emphasis could have been given to relating the material in the book to activities relevant to the students. Although the probing question dotted throughout the text would help the thoughtful reader, they generally support only a very didactic teaching style and make no concessions to the need for differentiation in ability, if not most, computer studies classes.

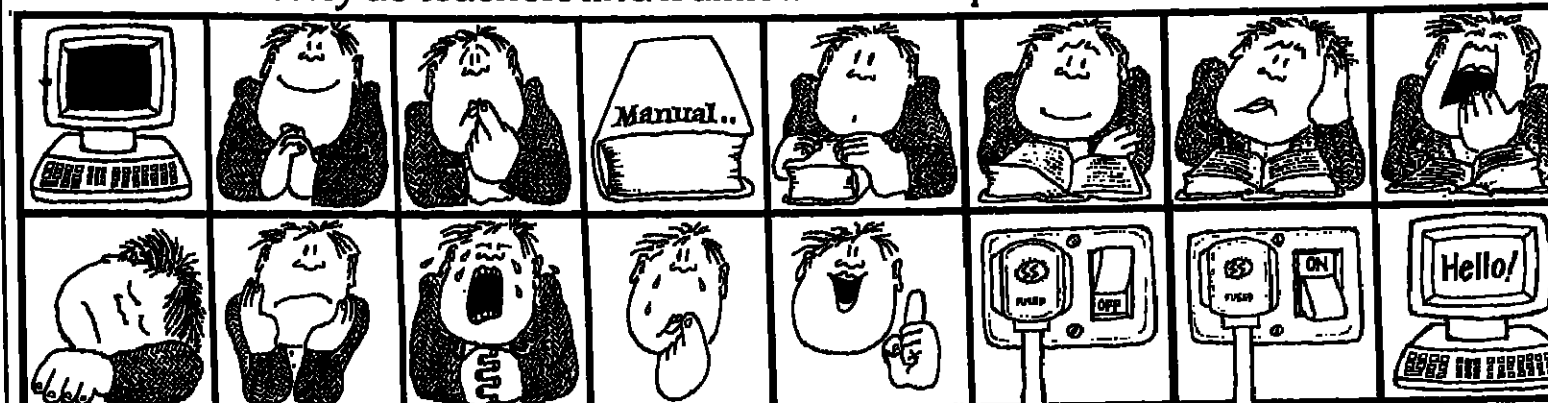
This is a clearly presented book with excellent diagrams. It gives full coverage to the content of GCSE Computer Studies syllabuses and should make an excellent revision book for students of average and particularly above average ability.

Further information available from the CASCAD Unit, County Hall, Leicester.

Don Hayden is principal careers officer with Leicester City Council.

BOOKS

Why do teachers find it difficult to interpret the manuals?



I've got a problem

JOE TELFORD

The phone rings. "I've got a problem, it's about word processing. How do I make the tab stop work?" "Have you read the manual?" "Well, yes but I think it's got that bit wrong."

If it wasn't word processing, it could be a spreadsheet problem, or a misunderstanding with another application manual. Come to think of it, almost every technical problem that teachers ring up about, or drop in to discuss, could be solved simply by reading the manuals that come with the software. Why then the high incidence of teachers who find it difficult to interpret them?

The problem with manuals is increased because secondary education particularly in the 14-plus exam phase is changing so quickly that learning has to be supported with these same manuals which teachers find so difficult to understand. If teachers have problems, what chance will the students have when they need to refer to data sheets, catalogues, and software manuals for GCSE courses?

One of the outstanding problems with computer manuals is their readability or lack of it. A reading age of over 18 is needed for the Nimbus, BBC Master, Macintosh and Amstrad guides, and over 14 for packs like *Word*, *View*, *RM Logo* and *Logotron Logo*.

The first thing that teachers complain about when reading manuals or user guides is the level of jargon. This is a pity because the manual is essential for improving clarity by, for example, reducing sentence length. There is always a fear of "talking down" to teachers through "trivialized" writing styles, but experience is that only the would-be experts complain. The

words themselves can be remedied by a good glossary, the sad fact is that few readers look more than briefly at such explanations. So it is imperative that jargon is used sensibly, only where meaning could be lost if it was not used, and that it is explained carefully the first time it is used. Jargon is one problem, but worse still is the style of writing. The majority of manuals seem to be written by computer specialists for computer specialists, and they seem intent on impressing the readers with their superior knowledge of the computer or software in question. This results in technical verbosity, rather than concise, easily digested statements. The most effective computer handbooks are the ones which are intended for children, and written by knowledgeable educators rather than technocrats. When should employ technical writers they should above all consider their audience. They should also encourage a friendly writing style and demand a double editing procedure.

The double editing, which is a technique being adopted in the publication of open learning materials, ensures that the technical aim of the manual is achieved, but not at the cost of readability. The second edit, by a professional who understands the essential for improving clarity by, for example, reducing sentence length. There is always a fear of "talking down" to teachers through "trivialized" writing styles, but experience is that only the would-be experts complain. The

majority of teachers trying to understand new computer systems generally appreciate simple sentence structure, clearly identified paragraphing, descriptive asides about the essential jargon, and summaries of what each chapter will do.

A major problem with technical manuals is presumably also the cost. Unfortunately cost-cutting at this stage leads to manuals which try to do everything, which cannot be tutorial because they must contain enormous amounts of reference material. The word density can turn pages into black mires of unfriendly text. Manufacturers should consider the need for a range of manual support: three separate manuals where needed; or manuals in three clear sections: a beginners' "get-you-going" manual; an advanced explanation of the more complex features of the package; a reference section (not glossary), for dipping into to solve specific problems; simple summaries of what each chapter will cover: large print, diagrams of necessity, and significant areas of white space. Even if they were more expensive, they would be preferable to manuals which teachers can't and don't wish to read.

Some computing firms provide excellent manuals which at first sight appear appalling. The Microsoft *Word* processing one from RML is an example. Although its sheer bulk is daunting, its contents are surprisingly understandable. The Apple Macintosh handbooks provide a real insight into how the

good manual can be produced, and part of the answer lies in the computer itself. If a particular computer company standardizes the approach to using the facilities of its machine, then the information learned from the first manual will help with subsequent ones. The manuals could then be shorter and assume that the basic computer skills have already been adopted. Given the intuitive approach of much Macintosh software, along with a standard language for explaining how to use the computer, more schools might have adopted the Macintosh as a standard, had it not been for the DTI's "buy British" policies.

There is a message here for any firm wishing to sell its product to an increasingly sophisticated education market. Manuals, software and hardware should go hand in hand, and any effort spent on standardizing the techniques of communication between man and machine can pay off by simplifying manuals.

The writing process is cyclic. I have spent some time complaining about manufacturers' provision of information in user guides. It is, however, worth asking teachers if they teach pupils how to use manuals in their classrooms. Should the reading of technical manuals be an extension of current reading schemes? Should it be covered by English teachers in secondary classrooms or be the domain of the technology or IT teacher? One thing is certain: everyone, manufacturer, teacher and student, must pay more attention to this mechanism for transmitting information.

Joe Telford is Assistant Director of the Cleveland Educational Computing Centre.

The global village

ERIC DEESON

The Age of Access, Edited by William Edmondson. Croom Helm £19.95. 0 709 93458 0. An Introduction to Expert Systems. By Michel Gondran. McGraw Hill £6.95. 0 070 84157 8.

When Professor Colin Cherry of Imperial College died in 1979, he was part way through a book called "The Second Industrial Revolution"; he saw it as an important summary of his lengthy work on the social aspects of new information technology. William Edmondson, one of his students, has now brought Cherry's material to publication. *The Age of Access* is the result.

The *Age of Access* is very readable, thought-provoking, and up-to-date. Its concern is with the future of the global village as an artefact of the communications systems we are now starting to see - such as the international telephone network, "the biggest machine in the world", and the universal information services like broadcasting, "highly political affairs faced with the problems of trust".

Structurally, this is only a few chapters near completion, plus masses of notes. Edmondson has not attempted to write a book which is intended to be read, but rather a book which is intended to be used as a reference work.

possible. These main chapters provide good bedside reading, while the notes are well worth dipping into at random. Subtitled "Information technology and social revolution", *The Age of Access* is an important book, regrettably expensive for its size, but it closes with a useful index.

That index does not include any reference to expert systems, though Cherry came close to the concept several times. An expert system is a kind of computer software package with a database of facts, relationships and rules of "fuzzy logic" (heuristics). Michel Gondran's book on *An Introduction to Expert Systems* is a monograph on the field, first published in French in 1983, and translated and edited by Joanne and Peter Gosling.

Despite its title, the book is not accessible to the novice unless he or she has a great deal of determination and a good glossary to hand (the book does not include one). Having said that, one should stress that this is a brilliant book (96 pages) on a very important field. As an area of artificial (machine) intelligence, the study and use of expert systems is well advanced, and is now common in business, science and technology. There has been a quiet revolution here whose general understanding has been clouded by a number of unhelpful, handbooks for home computers. Teachers ought to have a good grasp of machine intelligence and of expert systems in the field of "intelligence". The very nature of the "intelligence" is concerned.

THE STARTING POINT FOR A ZOO PROJECT

PLAN A ZOO VISIT

RESCUE THE ANIMALS

RESEARCH ANIMAL FACTS

FIND OUT ABOUT ZOOS

FEED THE ANIMALS

SOLVE PROBLEMS

ZOOPAK

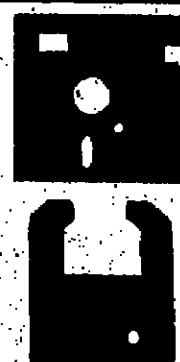
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Career wise

DON HAYDEN

The amount of computer software available to enhance careers education and guidance in schools has increased rapidly over the past few years. Careers officers and teachers are often perplexed by the range of choice and worried about the complexities of implementing programs. It is, therefore, refreshing to come across systems which do not demand computer expertise, can be easily adapted to the time and resources available and which are readily understood by students.

Leicestershire Careers Service's CASCAD Unit has long experience in the design of careers education and guidance software. The *Cascad* program was the first computer program to be used in conjunction with careers guidance. It is now the most extensively and widely used program in UK schools. It was designed to aid the counselling of the more academic student. This left a gap in provision for the mainstream and less able school leavers. David Pollard and Chris Bosley of the CASCAD team have now filled this gap with a new piece of powerful software known as *Jobwise*.

Jobwise incorporates the same principles as *Cascad*, but is aimed at the client group that *Cascad* ignores. Students are presented with a list of work features and skills to which they can respond positively or otherwise on a five-point scale. The students can also list any career ideas of their own, their thoughts on further study or training after leaving school, and their likely examination achievements. All this information is assessed by the program which matches the young person's opinions with details of potential careers. These cover a wide range of occupations available to people leaving school, college or university. The program also provides a ready-made list of careers for the purpose of a trial use, with a view to possible subscription. Careers services adopting *Cascad* and/or *Jobwise* subscribe on an annual basis. Each service is responsible for training staff and materials for this purpose. *Jobwise* is particularly well used at Leicestershire Careers Service, where it is used by 10 schools, including 1000 and

frame computer and is therefore processed at a distance. Questionnaires have to be sent to computer departments and returned with print-outs. Each young person receives a personal print-out. This reports on the most suitable fields of work and then goes on to select examples of jobs which are compatible with the young person's responses to the questionnaire. The print-out starts, however, with the client's own ideas which are assessed and commented on.

The most striking feature of *Jobwise* is the ease with which the print-out can be read and understood. As with *Cascad*, the "judgements" made by the program are clearly explained. The clients can, therefore, understand the reasons for their own job ideas being endorsed or not.

The CASCAD team kept *Jobwise* to themselves for a while, using Leicestershire Careers Service as a means of testing, evaluating and experimenting with it. Last summer, it was "on show" to local authority careers services and over 50 authorities have eagerly accepted the offer of a trial use, with a view to possible subscription. Careers services adopting *Cascad* and/or *Jobwise* subscribe on an annual basis. Each service is responsible for training staff and materials for this purpose. *Jobwise* is particularly well used at Leicestershire Careers Service, where it is used by 10 schools, including 1000 and

fifth year school pupils, YTS trainees and unemployed young people. It can be used in various ways, depending on the young people concerned.

The prime purpose of this print-out is to help them explore their concepts of jobs and to picture themselves in relation to working situations. It does this by reflecting each young person's current thinking. The role it plays in careers guidance will therefore depend on the individual's needs and on the style of guidance adopted by the adviser. *Jobwise*, like *Cascad*, is a personal and social education, for young people can see his/her employment planning as part of a wider personal development.

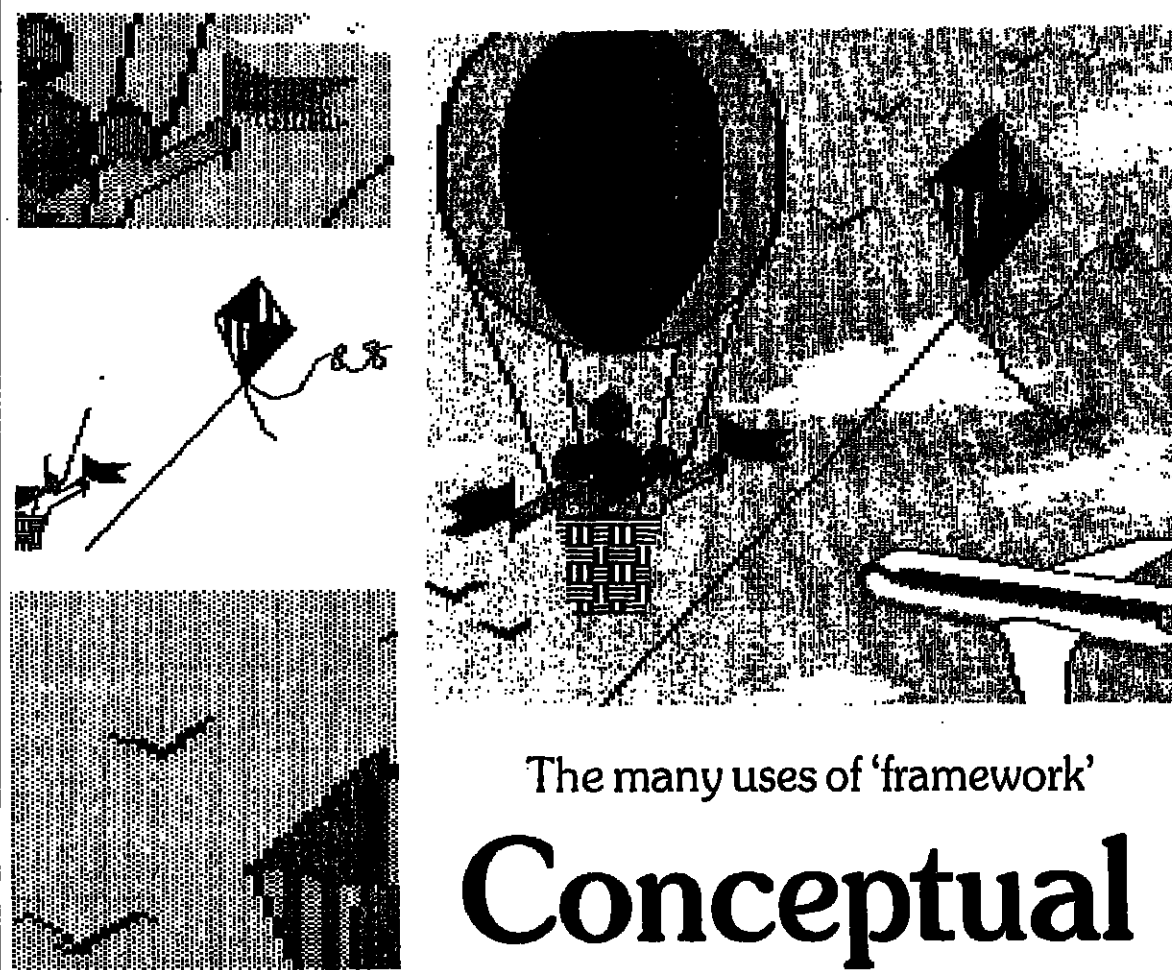
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SOFTWARE

SOFTWARE



The many uses of 'framework' Conceptual

DAVID KING

This is the type of program I've been waiting for for years - it's so easy to make I do what I want it to do!

More and more teachers are moving away from trying to use a large number of specific computer programs, each dealing with one area of the curriculum. Instead they are concentrating on a small number of versatile and easy-to-use 'framework' or 'content-free' programs, which they can tailor to meet their pupils' needs.

These programs provide a framework into which teachers (or pupils) can put the sort of contents that they want to use by making their own 'files' for the program. A number of framework programs for the BBC micro have been released recently through the MESU Blue File system: all are freely copiable within the UK.

Several framework programs are already being used widely. One is *Prompt*, the first word processor into which it was easy for students to enter whole words and phrases by a single press on the 'Concept' Keyboard. Another popular (and much more sophisticated) one is *Writer*, from the Primary Project. These have both now been combined in a considerably enhanced version, called *Prompt/Writer*, which is even easier to use and has many new features.

One of the best features of *Prompt/Writer* is how simple it is to make or change 'overlay files' (ie vocabulary lists for the Concept Keyboard) which can also be used in other programs. *Prompt/Writer* files can be used directly with *Folio*, the popular word processor; and by using *Concept*, the new Blue File program, they can be adapted for *Wordwise Plus*.

Concept lets you set up the Concept Keyboard so that it can be used with many programs that were not written with it in mind. The teacher can make one or more files for use with a particular program and children can then simply enter commands by pressing on words or pictures on the Concept Keyboard. What these words are, and where they appear on the Concept Keyboard, is up to the teacher, so many programs that might otherwise be off-puttingly difficult for a lot of children become accessible.

One interesting and very popular use of *Concept* is to control Logo or turtle-graphics. The commands can be

shown as diagrams on the Concept Keyboard, and children can build up an understanding of Logo in a logical and easy-to-understand way by using a succession of overlays.

Tray is another framework program which has been available for several years, in various forms. A new version, *Developing Tray 2*, has been prepared by Mike Blamires of Redbridge SEMERC, and has also been distributed through MESU Blue File. This is easier to use, and has new features. Databases have been used for many years, but it is often difficult for children to visualize what a database is. A new program which makes this very much easier is *List Explorer*, perhaps the most exciting framework program of the year. This uses the Concept Keyboard in a natural and versatile way. All the 'records' (items in the database) and 'field names' (headings used) are shown on the Concept Keyboard overlay sheet. A typical *List Explorer* overlay has a file on eight children, with information stored under six headings. To find out about the children, users press one of

the photographs on the overlay and, when appropriate, one of more of the headings. The relevant information is then shown on the screen. Information can easily be added or changed.

The format lends itself readily to many exciting uses: files for science using objects found on field trips; or for home economics using pictures of different types of foods; files using a map on the overlay, with information about the different places shown in the map. The most revolutionary aspect of *List Explorer* is the way in which children can use pictures (or real objects) as their way into a database. Like all worthwhile framework programs, it can be used in many very different ways. The main limiting factor is our own imagination.

A different type of framework program is represented by *Window*. Here, a high-resolution picture is 'hidden' on the screen. Pupils see a succession of different 'windows' and try to discover as much as they can about the picture from what they see. The program is primarily designed to start children thinking and talking; unlike others, it works best if an adult is present to direct conversation sensitively. The window can be controlled from a switch, a joystick, the Tandy Electronic Book or Concept Keyboard, as well as from the computer's own keyboard. *Window* comes with over 30 attractive and interesting screens, and it is easy to introduce new screens from other programs (such as *Image*) or from video digitizers.

Teachers want programs which are easy to use, yet versatile and flexible. Above all, they want programs which supplement (rather than interfere with) what is already being done in the classroom. Well-designed framework programs are proving very popular indeed as one of the most effective ways of using micros. What is needed now is a strong national effort directed at getting them used widely.

Prompt/Writer, *Concept*, *Developing Tray 2*, *List Explorer* and *Window* are MESU Blue File programs; they are available from the Blue File contact person in each LEA. Contact MESU or your regional SEMERC for the address (Bristol 0272-733141, Manchester 061-225 9054, Newcastle 091-266 5057, Redbridge, London, 01-478 6363); MESU 0203 416994. *Folio* Tiedmen Software, PO Box 23, Southampton, Hants SO9 7BD. *Wordwise Plus* Computer Concepts Gaddesden Place, Hemel Hempstead, Herts HP2 6EX. *Image* Cambridge University Press, Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU. *Concept Keyboards* from AB Euro Marketing, Wharfedale Rd, Pentwyn, Cardiff, South Glamorgan, CF2 7HB.

David King is manager of the MESU Special Needs Software Centre at Manchester Polytechnic.

Company

MIKE THORNE

Unisim
Pack contains RML or BBC disc, tutor's manual, nine copies each of the *Player's Guide* and *Financial and Management Information Booklet*, set of master forms, £20.
Unilever Educational Liaison, PO Box 68, Unilever House, Blackfriars, London EC4P 4BQ.

Unisim is intended to give students aged 16 and over insight into running a business. It is a computer-based simulation which develops the soap-powder and foods group Unilever, have used successfully in management training. At £20, the complete pack is already remarkably good value but schools can reclaim half of this under the DTT software scheme. Thus, schools can equip themselves to run a business general studies class or obtain a useful resource for economics or business courses for a mere £10.

Working in company teams, pupils analyze data about their companies and make decisions on production, planning, finance, marketing, sales and personnel in order to achieve set objectives. The game is played in several decision periods, each of 20 to 40 minutes, and the total number of players can be between eight and 40.

Although the interaction of the teams' inputs creates a realistic simulation without any more teacher intervention than typing their decisions into the computer, the teacher can use certain options to make the game more difficult once the players have got the general idea. These options include: offers to tender for an order outside normal market segments; buying in stock from an outside supplier to meet peak demands for the product (actual giant chocolate bars); introducing an external economic factor to change the total size of the market; and creating strikes to disrupt production.

Generally the production standard is high, though there are occasional lapses in typography - for example, 'You have three choices' on the Labour Relations master form. More importantly, perhaps, the style is a little out of right for sixth formers and above, and allows for both male and female managing directors. Every now and then the business-speak poses through, as in the following comment on the description of what a balance sheet is: 'The Balance Sheet is therefore more a record of the stewardship of the business managers than a measure of their performance.'

The software design is adequate for the task, though it is not very robust. It was all too easy to get error messages of the form 'error 208 9010' and 'error 56 18516', perhaps because the program allowed alphabetic characters to be typed in numeric fields.

There can be no doubt that the very best way to get business experience is with some cash in hand and a real product. But this can be too difficult to organize for all sorts of reasons. Less energetic teachers may find this pack a first-rate alternative.

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Think big

DAVID MARSHALL

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Disc for BBC B/B+/Master/Compact £16.10 inc VAT
Available August
4Mation, Linden Lea, Rock Park, Barnstaple, Devon EX32 9AQ.

For those of us who have been used to great adventures from 4Mation their latest offering comes as a bit of a shock. When I first heard the title I had visions of being trapped inside a calculating device fending off dragons, collecting eggs, piecing together a puzzle or trying to outwit a witch. But not so. *The Big Calculator* is just what it says it is - a full screen version of a calculator. It is also extremely useful and very well thought out.

On booting the disc a row of six icons appears that allows you to choose the input device you wish to use. The default device is the keyboard, of course, but input can be made by lightpen, joystick, mouse, concept keyboard or touch-screen. Choosing *Start* loads the calculator screen.

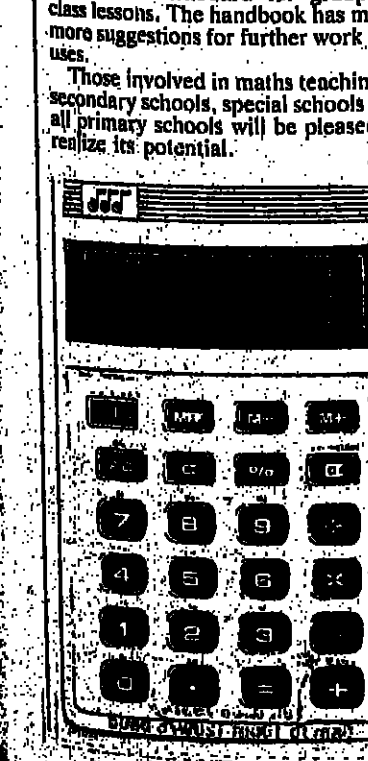
It really is just like having a normal calculator that you would hold in your hand, up on the screen. From the computer keyboard you just use the arrow keys and *Return* to make your way around and do your sums. All numbers are there, and +/-. I tried all sorts of calculations and apart from algebraic functions that are explained in the handbook, everything worked first time.

There are, of course, additional functions. You can have all calculations printed out by choosing the printer icon. You can set a clock, both to tell the time and as an alarm for setting time limits.

Selecting the printer icon for a second time reveals another screen that allows you the facilities of the ordinary keyboard so that you can make notes on what you are doing - annotating calculations no less. A control program allows the user to make any alterations to various settings and layouts to suit the children in their class. The speed of response, whether 12 or 24 hour clock, left margin for the printer, are all changeable. There are also eight alternative layouts that allow you to use the calculator in bases 2 to 9. This is a feature that conventional calculators could well adopt. A simple supplementary program called *Bases* allows you to enter any number in a base of your choice and it is displayed as a number in all the other bases.

There are so many obvious ways that this excellent program can help but, in particular, it means that children who are physically handicapped or partially sighted can enjoy the modern maths where a calculator is vital. It has always been difficult to demonstrate the use of a hand-held calculator for obvious reasons. This program is an excellent electronic blackboard for group or class lessons. The handbook has many more suggestions for further work and uses.

Those involved in maths teaching in secondary schools, special schools and all primary schools will be pleased to realize its potential.

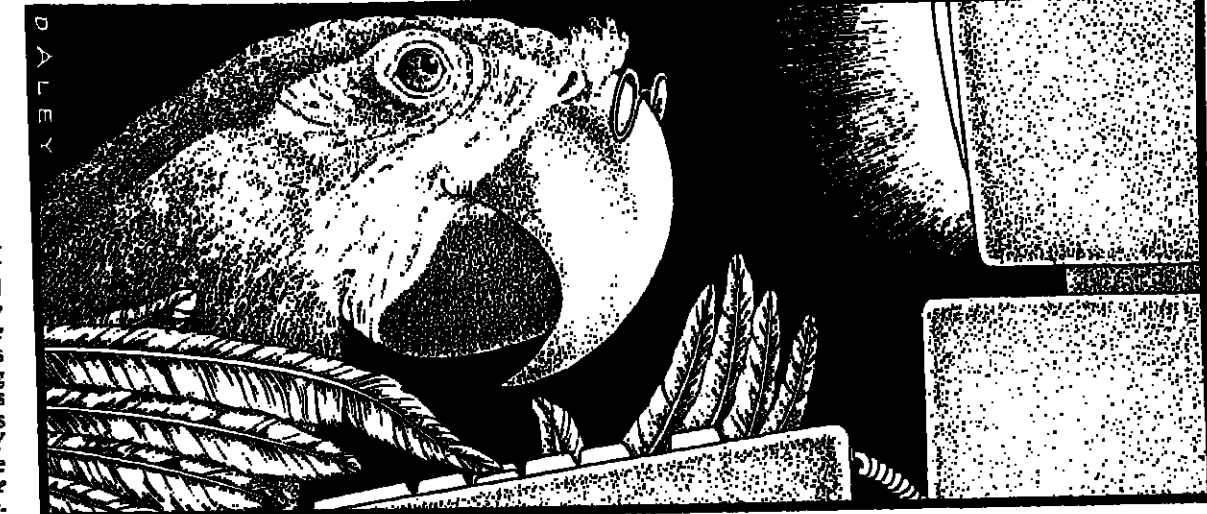


Fantasy Islands
Teachers' book with three 40-track discs for BBC Micro/Master, £33
Adventure Board
Input device with overlays
For BBC Micro/Master, £20 in kit form
Jordanhill College of Education, 76 Southbrae Drive, Glasgow G13 1PP.

Fantasy Islands is the third 'computer assisted topic' from the Jordanhill team that produced *Desperate Journey* and *Travelling Shop* (reviewed in *The TES* March 7 and June 13, 1986). It has taken on the challenges of computing in the infant department, and has tackled the problems that some infants experience with the QWERTY keyboard by providing an alternative input device. The topic and *Adventure Board* were designed by Tricia Waterson, though both projects were a team effort involving college staff and Strathclyde Region - where a dozen schools piloted these resources.

The *Adventure Board* is an eight-switch board that plugs into the user port and accepts A3-size overlays. It is supplied in kit form with detailed instructions. Although the tools and skills required are not particularly taxing, I suspect most busy primary teachers would rather spend their time running the programs than seeking out soldering irons. The booklet rightly points out that a local secondary school technical department might help, but not all primaries will find this easy and special schools snafus for a ready-made board at a higher price. (I gather that Jordanhill is actively pursuing this.)

As it stands, the board is remarkable value: it is attractively packaged in a sturdy box, comes complete with driver software and sample pre-punched overlays, and is comprehensively documented. The illustrated glossy booklet contains many ideas for all stages of primary and for handicapped children. The kit has thoughtful touches, such as explicit instructions



Tourist season

JACQUETTA MEGARRY

on backing up your disc.
The *Fantasy Islands* software does not demand an *Adventure Board*; many programs suggest a very simple paper sheet that divides the keyboard into four areas overlaid by symbols: the right arrow and left arrow respectively progress and backtrack, the third serves as 'I wonder', or sometimes to zoom or explore, and the fourth area is a happy face which confirms a choice. The paper overlay is held in place by the keypad holder - easy on a Model B, much harder on a Master.

Personally, I found the overlays cumbersome to use and preferred the positive feel of the keyboard and *Adventure Board*. However, that may say more about my previous experience of QWERTY than about the cost-effectiveness of this approach for infants. Presumably field-testing

would have revealed any difficulties that infant teachers might experience. Routines are also provided to allow work with a Star Concept Keyboard.

The software consists of 21 programs on three discs: 'Discovering the Islands', 'Life on the Islands' and the 'Tourist Season'. After booting the disc you set sound on/off and choose whether to use overlays. Then you see the disc menu and select a program number. Content ranges widely, from designing a vehicle to singing a calypso. The programs are appealing, with attractive colour graphics, although the animation is very slow. Sound effects are included, most delightfully in 'Calypso', which plays in harmony

while displaying notes and words on screen. A minor criticism is that volume control should be on a sliding scale to allow for ambient noise level and Model B/Master differences. However, as befits the topic approach, programming virtuosity is not an end in itself; the software works because it is embedded in a framework of extensively field-tested classroom ideas.

The teacher's book consists of 112 full-colour A4 pages, with colour-coded flashes: blue for background information, green for activities and examples of pupils' work, red for programs. Supporting activities are clearly described, listing group size, purpose, preparation, procedure, teaching points and variations for different ages and stages. A convenient folder houses book, discs, key-strip and overlays in two sizes, making it a teacher-friendly package.

A word to the wise

JOE TELFORD

TVEI WordPlus Software Pack
Jacquetta Megarry and Eric Deeson
£18 (£26 with *Wordwise Plus*)
Contains three discs, a manual and a prompt card
Jordanhill College of Education, 76 Southbrae Drive, Glasgow G13 1PP

All the programs in this pack are written in WordPlus, the programming language built into the *Wordwise Plus* ROM. The software will only function if the *Wordwise Plus* chip from Computer Concepts is installed in your machine. The theory is that with this single chip, teachers can wordprocess text. They can also process text on disc or in memory, because programming language is similar to Basic, but it contains no complex mathematical operators, contains no complex graphics facilities, and contains a very powerful set of commands for manipulating text. It is, unfortunately, as difficult for teachers to write good WordPlus programs as it is to write good Basic programs, hence the possible need for a software pack.

The manual is split into three sections: a user guide to each program, a technical guide to each program, and a programming guide to each application in WordPlus, and a set of appendices, including a glossary of terms used. The technical guide is the heaviest reading, and unless you wish to change program, operation can be left alone. The first section, on using the programs, is essential reading, because handling this software will prove difficult unless your background includes regular use of the *Wordwise Plus* ROM. The inside front cover sets out eight things to try when things go wrong, and page two explains that: 'If simply isn't possible to make WordPlus software foolproof'. In practice, teachers unaccustomed to the system had to rework each section several times as they worked through the applications programs.

The 10 programs in the package run according to specification, provided the instructions are carefully followed. They cover word processing, editing, and text manipulation, and

ification of sentences of inconsistent style in a passage, single user electronic mail simulation, production of random text for 'consequences', open cloze, create and use tests with clues, create and use multi-choice tests, and create and use alphabetic dictionary databases.

When I first heard about the WordPlus package, I found the idea of a content-free language package quite exciting. Unfortunately the material does not live up to my expectations. Although all the packages work as per the instructions, they each have idiosyncrasies. There are, commonly available, copies of many of the individual programs written in Basic, with better presentation than WordPlus allows, and equally 'content-free'.

The idea of a word processor with its language seems attractive, yet the applications which one would have expected for a TVEI type package - mailing lists, mail merges, label production - are missing from this pack. Perhaps this reflects the looking at Virtual screen word processors, and taking to *View*, which is now bundled with the Acorn Master.

While I was quite impressed with *Lexicon*, and *Email* might have something to offer secondary IT teachers, I feel the pack would be difficult to extend into any but the keenest primary schools, considering that some secondary teachers who were used to *Wordwise* had problems using this software. Cross-curricular software must be much more intuitive to handle.

In addition, some of the programs seem suspect, particularly *Timetree*, which disregards good practice in, proving, reading - skills, because, it actually increases the number of points on a line which the eye has to examine to make sense of a passage. Of course we must be aware of the rule: that software is only as good as the teacher who uses it, yet when I look at this software, I feel that TVEI could have used such a talented writing team in better ways. The package relies on specific ROM software. It is very idiosyncratic to use. It replicates existing material, and unfortunately the words 'Content Free software' do not improve any suggestion on this package which they suggest it could do better.

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The four MEDUSA guides provide easy to follow instructions on the use of the Acornsoft VIEW family of business applications software, comprising the VIEW wordprocessor, VIEWSTORE database, VIEWSHEET spreadsheet and VIEWPLOT graphics package.

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Available from: MEDUSA, Bishop Grosseteste College, Newport, Lincoln, LN1 3DY
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WEST GLAMORGAN County Council

Education Department LECTURING VACANCIES

Applications are invited for the following posts to commence as soon as possible:
Application forms and further particulars for the following posts must be obtained from the appropriate college concerned.

Gorseinon College, 52/58 Belgrave Road, Gorseinon, SA4 2RF

LECTURER IN BIOLOGY/CHEMISTRY. The successful candidate will be expected to work in the study team of Science and Health Studies and to service the needs of any college course requiring an input in Biology. This will include initially courses at 'A' level, G.C.S.E., and B.T.E.C. in Science and Health. The successful candidate will also have to contribute to the college chemistry teaching programme to G.C.S.E. level and 'A' level. (Post Ref: 3.19.87).

Neath College, Dwr-y-felin Road, Neath, SA10 7RF.

LECTURER IN CHEMISTRY. Good Honours graduate in chemistry to teach Inorganic Chemistry/Materials Science to H.N.C. and Royal Society of Chemistry Courses and General Chemistry to a wide variety of courses. Preference will be given to candidates with research experience and a higher degree. Substantial appropriate teaching experience will be required for an appointment at Lecturer II level however recently qualified applicants will be considered for appointment at Lecturer I. (Post Ref: 4.19.87).

Swansea College, Tycosh, Swansea, SA2 8EB.

Swansea College is a Tertiary College in its third year of existence with a full-time student roll of approximately 1,200. The college also caters for a wide range of part-time and evening students in the City of Swansea.

1. **SENIOR LECTURER IN ENGLISH AND COMMUNICATIONS.** The successful candidate will be an Honours Graduate in English with a teaching qualification and teaching experience. His/her responsibilities will include the running of the Languages Section within the college. He/she will also be expected to make a significant contribution to college management and an ability to lead a group of staff with enthusiasm and commitment is essential. (Post Ref: 5.19.87).

2. **LECTURER IN DRAMA.** Applicants should be highly qualified Drama specialists with a teaching qualification and teaching experience. The person appointed will join an active team in the Creative Arts section and will be expected to contribute considerably to the staging of college productions. The successful candidate will teach Drama at 'A' level, G.C.S.E. level and to students following vocational courses. (Post Ref: 6.19.87).

Application forms and further particulars for all posts can be obtained from the appropriate college concerned on receipt of a large stamped addressed envelope, quoting the post reference. The CLOSING DATE for receipt of completed applications is THURSDAY, 2ND JULY, 1987.

COLLEGES OF FURTHER & TERTIARY EDUCATION continued

KENT

COUNTY COUNCIL
EDUCATION DEPARTMENT
NORTH WEST KENT
COLLEGE OF TECHNOLOGY
Applications are invited for the following posts to commence on 1st September 1987, or as soon as possible thereafter.
1. **LECTURER IN DRAMA** and **B.T.E.C. COMMUNICATIONS** modules. The Department services English and communications across the College and Drama Studies is included in a Media Studies programme. Enthusiasm and energy will earn opportunities for developing drama activities.
2. **LECTURER IN HEALTH & CARING** studies to teach a range of subjects in the education of health and caring. Involvement in organising work experience placements will be required. NAMCW and B.T.E.C. courses are run in this expanding section, with plans to introduce NVQs.
Further details and application forms to be returned within two weeks available from the Principal, North West Kent College of Technology, Milken Road, Dartford, Kent DA1 9LU. Tel: 0354 3571. 280036 (40865)

KENT COUNTY COUNCIL
EDUCATION DEPARTMENT
THANET TECHNICAL COLLEGE
DEPARTMENT OF SOCIAL & HEALTH STUDIES

Deputy Head of Department (Senior Lecturer)

To undertake a significant role in department administration as well as organic and manage social care courses. The successful candidate will teach her/his specialist subjects across a range of courses. Applicants should hold a degree and/or COSW and have practical and teaching experience.
Salary Scale: £12,615-15,873 (under review)
This post is available from 1 January 1988 following the retirement of the present postholder. Closing Date: 3 July 1987.
DEPARTMENT OF BUSINESS & MANAGEMENT STUDIES

Lecturer I in Secretarial Skills
Applications are invited from suitably qualified candidates to teach Secretarial Skills and related subjects. An interest in modern technology/computer packages for office studies/word processing would be an advantage.
Salary Scale: £6,843-11,865 (under review)
This post is available from 1 September 1987 or as soon as possible thereafter. Closing Date: 26 June 1987.
DEPARTMENT OF GENERAL EDUCATION

Lecturer I in Mathematics
Applications are invited from suitably qualified candidates to teach Mathematics for GCSE and A Level Studies.
Salary Scale: £6,843-11,865 (under review)
This post is available from 1 September 1987 or as soon as possible thereafter. Closing Date: 26 June 1987.
Application forms and further details for these posts are available on request from the Principal, Thanet Technical College, Ramsgate Road, Broadstairs, Kent, CT10 1PN (telephone 0843 4611) to whom they should be returned by the closing date(s) as stated above. (40859)

KENT COUNTY COUNCIL

WALTHAM FOREST COLLEGE
Further & Higher Education
Department of Construction

Lecturer Grade I
Plumbing and Building Services. To teach on City & Guilds 603, B/TEC Certificate and Diploma programmes.

School of Catering, Hotel Administration and Tourism
Lecturer Grade I
Food Preparation and related subjects. To teach Craft and B/TEC students. First Class trade experience is essential. Teacher training may be arranged.

This post is to cover for long term illness of a permanent member of staff and is therefore temporary in the first instance.

Both posts to commence 1st September 1987 or as soon as possible thereafter.

Salary: Lecturer Grade I - £7838 to £12860
Point on Scale according to age and experience.

Application forms and further details from the College Personnel Services Officer, Waltham Forest College, Forest Road, London E17 4JH. Telephone 01-527 2311 Extension 224.

Closing date: 2 weeks from appearance of advertisement.

WALTHAM FOREST COLLEGE is a multi-racial area and we are anxious to ensure this is reflected in our workforce. We welcome applications from people regardless of race, colour, creed, ethnic origin, age, disability, marital status, sex or sexual orientation. (4089)

Haringey
Progress with humanity
Haringey is an equal opportunity employer. We welcome your application which will be considered on merit, irrespective of race, marital status, sex or any disability you may have.

Waltham Forest

KILBURN POLYTECHNIC

Prory Park Road NW6 7UJ

DEPARTMENT OF FASHION, FOOD AND COMMUNITY STUDIES

Lecturer II in Sewing and Light Clothing Assembly

(Temporary Unestablished Post)
POST NO. 87/15

Required from 1st September to teach Sewing and Light Clothing Assembly for one year from 1st September 1987 until 31st August 1988 to replace a member of staff on maternity leave.

The department offers a range of full and part-time courses leading to the BTEC Certificate and Diploma in Clothing and the City and Guilds of London Institute 460 Clothing Craft Certificate and Foundation courses. Candidates should have appropriate professional qualifications and industrial experience.

Lecturer I in Catering Subjects

POST NO. 87/16

Lecturer I in Catering Subjects

(Temporary Unestablished Post from 1st September 1987 to 31st August 1988)

POST NO. 87/17

Required from 1st September to teach on Catering Courses which includes full and part-time City and Guilds 706/12 and Foundation courses.

Candidates should have appropriate professional qualifications and/or industrial experience

Salary: Lecturer I £6,843-£11,865
Lecturer II £8,595-£13,656
Plus London Allowance of £1,110

Brent is an equal opportunities employer. Applications are welcome from candidates, irrespective of race, nationality, ethnic or national origins, age, marital status, gender, and from lesbians, gay men and disabled persons.

Brent is fully committed to Multi-Cultural Education.

Further particulars and application forms, returnable within 14 days of this advertisement may be obtained from the Principal on receipt of a S.A.E.

London Borough of BRENT
Brent is an Equal Opportunity Employer

WALTHAM FOREST COLLEGE
Further & Higher Education
Department of Construction

Lecturer Grade I
Plumbing and Building Services. To teach on City & Guilds 603, B/TEC Certificate and Diploma programmes.

School of Catering, Hotel Administration and Tourism
Lecturer Grade I
Food Preparation and related subjects. To teach Craft and B/TEC students. First Class trade experience is essential. Teacher training may be arranged.

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Closing date: 2 weeks from appearance of advertisement.

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Progress with humanity
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Waltham Forest

COLLEGES OF FURTHER & TERTIARY EDUCATION continued

LANCASHIRE COUNTY COUNCIL

An Equal Opportunities Employer
Applications are invited from suitably qualified persons for the following posts to commence on 1st September 1987 or as soon as possible thereafter.
1. **LECTURER IN BIOLOGICAL AND APPLIED SCIENCE** to teach Human Biology and Food Science to H.N.C. and B.T.E.C. students. The person appointed will act as course co-ordinator for the Pre-Hospital course.
2. **LECTURER IN HAIRDRESSING STUDIES** to teach hairdressing and related subjects to full and part-time students preparing for City and Guilds qualifications.
3. **LECTURER IN GENERAL EDUCATION** to teach Social and Life Skills to students on the Work Incentive course and additional subjects to students on the Work Incentive course. The successful applicant will have an appropriate qualification in the subject and will be responsible for the development of the course and the supervision of the staff.
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Required from 1st September 1987 or as soon as possible.

Application forms from/returnable to the Chief Administrative Officer at the College.

Closing date: 2nd July 1987. 220026

LINCOLNSHIRE
GRANTHAM COLLEGE OF
FURTHER EDUCATION
Stonehouse Road, Grantham.

**LECTURER GRADE I IN
ELECTRICAL ENGINEERING**
Applications are invited from holders of a Higher National Certificate or equivalent to teach a range of Electrical and Electronic subjects to students and apprentices on full-time, part-time and day release courses.

Further details and application forms may be obtained from the Principal on receipt of a S.A.E. 220026

LANCASHIRE
COUNTY COUNCIL
An Equal Opportunities Employer
Applications are invited from suitably qualified persons for the following posts to commence on 1st September 1987 or as soon as possible thereafter.
1. **LECTURER IN BIOLOGICAL AND APPLIED SCIENCE** to teach Human Biology and Food Science to H.N.C. and B.T.E.C. students. The person appointed will act as course co-ordinator for the Pre-Hospital course.
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54

COLLEGES OF HIGHER EDUCATION continued

HAMPSHIRE

KING ALFRED'S COLLEGE, Winchester

LECTURER/SENIOR LECTURER IN RELIGIOUS STUDIES WITH PROFESSIONAL STUDIES

Applications are sought for a well qualified person for a one year temporary post-time or full-time post in Religious Studies with Professional Studies. The successful candidate will have broad experience in the area of Religious Studies and will also contribute to the professional work in Religious Education. The ability to contribute to other areas of professional work in Religious Education will also be an advantage. Applicants will preferably have recent relevant Middle School experience.

A higher degree or recent research in an appropriate field would be an advantage.

The College offers a programme of C.N.A. Validated B.A. and B.Sc. degrees, courses, the Dip. H.E., and a variety of in-service awards.

Completed applications to be returned within 2 weeks of the appearance of this advertisement.

Northamptonshire County Council welcomes applications regardless of marital status, sex, race and disability.

Application forms available from The Dean, Faculty of Technology, Nene College, St. George's Avenue, Northampton NN2 6JD.

Completed applications to be returned within 2 weeks of the appearance of this advertisement.

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Adult Education

SOMERSET COUNTY COUNCIL COMMUNITY EDUCATION SERVICE

ADULT BASIC EDUCATION (ABE) AREA CO-ORDINATOR - SEDGEMOOR AREA

The County Council has adopted an ambitious development plan for its Adult Basic Education Service. The post will be based at Bridgewater College and the postholder will be responsible for co-ordinating the ABE service in the Sedgemoor area and for organising the ABE work in Bridgewater. The appointment will be for a period of 3 years, with the possibility of extension. The successful candidate will be responsible for the day-to-day running of the service, including the recruitment and training of staff, the development of courses, and the provision of a high standard of service to students. The postholder will also be responsible for the financial management of the service, including the preparation of budgets and the monitoring of expenditure. The postholder will be required to work full-time, Monday to Friday, 9.00 am to 5.00 pm. The salary for this post is £13,555 p.a. The successful candidate will be required to hold a degree or equivalent qualification in a relevant field, and to have at least 5 years' experience in a similar post. The postholder will be required to have a good knowledge of the ABE service, and to be able to work effectively with a team. The postholder will be required to have a good knowledge of the financial management of the service, and to be able to work effectively with a team. The postholder will be required to have a good knowledge of the recruitment and training of staff, and to be able to work effectively with a team. The postholder will be required to have a good knowledge of the development of courses, and to be able to work effectively with a team. The postholder will be required to have a good knowledge of the provision of a high standard of service to students, and to be able to work effectively with a team.

Application forms and details (see page 116) from the County Council, Sedgemoor Area, Bridgewater College, Bridgewater, Somerset, BA9 9JL. Closing date: 30th June 1987.

Application forms and details (see page 116) from the County Council, Sedgemoor Area, Bridgewater College, Bridgewater, Somerset, BA9 9JL. Closing date: 30th June 1987.

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HARINGEY ADULT EDUCATION SERVICE

Lecturer Grade I - Numeracy and Everyday Maths

Applications are invited from people who have experience of developing and providing numeracy and basic education for adults in a variety of community contexts. This post is one of two, which form a team developing adult numeracy on a borough-wide basis, and is based at White Hart Lane Adult Education Centre, London N22. This post is funded by an ALBSU local development grant, which ceases in December, 1987, at which time the Local Authority will assume full responsibility for the post.

The main responsibilities include: the organisation and development of the recently established Numeracy Resource Base and numeracy classes within the service; identifying numeracy needs of local communities in Haringey and making appropriate community-based provision; recruiting and training part-time tutors; teaching and providing support to students.

The Adult Education Service has recently adopted new policy guidelines which prioritise the needs of those members of local communities who experience educational disadvantage and cultural discrimination. The post holder will be expected to play a full part in the implementation of these policies.

Salary: Lecturer Grade I £8,058 - £13,080 including London Weighting.

Haringey Education Service is conscious that people from Black and Minority Ethnic communities, people who are bilingual, and those with disabilities are under-represented in the adult education teaching force. Applications from individuals from these groups are, therefore, particularly welcome.

Application forms and further details may be obtained from Helen Axendy, Staffing Officer, Further Education, 48 Station Road, Wood Green, London N22 4TY or telephone 881 3000 Ext. 3122.

Closing date: 3rd July, 1987.

Haringey
Progress with humanity

Haringey is an equal opportunity employer. We welcome your application which will be considered on merit, irrespective of race, marital status, sex or any disability you may have.

Application forms and further details may be obtained from Helen Axendy, Staffing Officer, Further Education, 48 Station Road, Wood Green, London N22 4TY or telephone 881 3000 Ext. 3122.

Closing date: 3rd July, 1987.

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Closing date: 3rd July, 1987.

DETACHED YOUTH WORK PROJECT, BIRMINGHAM

PROJECT LEADER

Salary: £11,952-£12,894 per annum

Barnardo's has been meeting the needs of young people at most severe risk for a number of years, by way of its outreach work from an existing Project.

It is now looking to create a detached youth work project to develop further work with young people involved in prostitution and crime and suffering from the effects of drug abuse, alcoholism and other associated problems.

The Project will service broadly the areas of Sparkhill, Sparkbrook and Balsall Heath, Birmingham.

A Project Leader is needed who will lead and develop this challenging new initiative, focussed upon those disaffected young people who see themselves as outside the current provision of established youth and community services.

Candidates must have the self-confidence, drive and imagination to work with very demanding young people, together with the ability to manage and support a team.

A Youth and Community Work or Social Work qualification, together with previous experience of detached work in an inner-city, multi-cultural environment, is essential. Applications from black workers will be particularly welcome as there is evidence that the Project should aim to meet the needs of a substantial number of black young people.

Barnardo's is a Christian Child Care organisation and offers conditions of service broadly in line with Local Authorities. Applications for posts are welcomed from persons irrespective of disability, marital status, sex or race. Transferable pension.

Informal enquiries to: Caroline Watts.

Tel: 021 550 5271.

For an application form, please apply in writing, to: Eileen Hipkiss, Personnel Secretary, Dr. Barnardo's, 'Brooklands', Great Cornbow, Halesowen, West Midlands B63 3AB.

Previous applicants need not re-apply.

Closing date for receipt of completed application forms: 3rd July 1987.

Interviews for the post will be held on 18th/17th July 1987.

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COUNTY EDUCATION OFFICE

Applications are invited from suitably qualified and experienced persons for these two key posts. Candidates must have had substantial administrative and managerial experience at a senior level in the education service. Both posts are within the Further and Community Branch, led by the Principal Education Officer (Further and Community).

SENIOR EDUCATION OFFICER (2 POSTS)

SMG 3 £24,630-£26,742

Youth, Adult and Community Education

To be responsible for directing the operation of the County's Youth, Adult and Community Education Services. The duties include directing a programme of activities including youth camps, residential centres and other recreational and cultural events including the County's Youth Orchestras. The person appointed will also be responsible for managing the Council's interests in both joint and dual use provision with District Councils and other bodies in relation to sport, recreational and arts activities.

Careers, Industry Liaison and Employment

To be responsible for the Careers Service; developing and maintaining a large programme of projects and links with industry and commerce in relation to schools and colleges; providing support for the Council's employment promotion activities; and co-ordinating and ensuring the efficient discharge of the Council's responsibilities.

In respect of the major programmes undertaken for the Manpower Services Commission, especially those relating to the young unemployed.

Among the benefits offered are generous relocation expenses and car leasing facilities.

Closing date: 3 July 1987.

Application form and further details available from (SAE please) the County Education Officer, PO Box 47, Thredneedle House, Market Road, Chelmsford CM1 1LD. (Tel Chelmsford 287222 Ext 2626).



EDUCATION DEPARTMENT

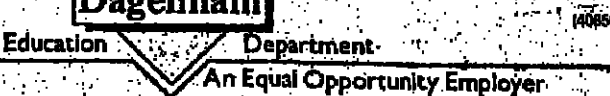
Youth and Community Officer and Warden

Salary: JNC points 5-9 Range 4 plus London Weighting and Essential Car User Allowance £11,685 - £13,029 plus £1,110 (increase in salary and London Weighting pending).

Applications are invited from suitably qualified and experienced persons for the post of Area Youth and Community Officer and Warden who will have specific responsibility for the statutory clubs and voluntary organisations within the North Area of the Borough reporting to an Area Management Committee. The person appointed will be Warden of a club which offers facilities for activities involving the community at large.

Closing date: 3rd July 1987.

Particulars and application forms are available from the Chief Education Officer, Ref: CSH, Town Hall, Barking, Essex IG11 7LU.



YOUTH LEADER

£10059 - £11217

Viking Boys' Club is established in a purpose built Youth Centre in the well populated inner City Area of Rock Ferry and caters for a mixed clientele and is managed by a voluntary committee. Responsible for continuing the work of the Centre whilst developing Youth and Community activities in the area.

Qualification in Youth and Community education essential.

For informal discussion contact Derek Mills, Youth Officer (Field) ext. 808.

Application form and further particulars from DIRECTOR OF EDUCATION, Municipal Buildings, Cleveland Street, Birkenhead, Merseyside L41 6NH (051-6477000 ext. 800) returnable by 3 July.

ALL APPLICANTS WILL BE CONSIDERED ON THE BASIS OF SUITABILITY FOR THE POST REGARDLESS OF SEX, CREED, RACE OR DISABILITY.

YOUTH & COMMUNITY continued

TRAFFORD
METROPOLITAN BOROUGH
CITY OF TRAFFORD
EDUCATION DEPARTMENT
FULL TIME TRAINER YOUTH WORKER
Required for October 1987 for a fixed term of not more than two years on J.N.C. Scale for Teacher's work. £7,100 - £7,800 per annum.
This post offers opportunities for experience and preliminary training in full-time youth work.
Application forms and further details available from the Chief Education Officer, PO Box 19, Town Hall, Sale, Greater Manchester. Tel: 061-872 2101 Ext. 3169. Closing date July 1987. 440000 (40646)

Overseas Appointments

AUSTRALIA

EFL teacher for new private college in Blue Mountains near Sydney. Graduate with RSA training, needs to have Australian resident status or very exceptional qualifications. London interview, teaching to commence September 1987. c.v. to Ann Baker College of English, Box 36, Katoomba, N.S.W. 2780, Australia. Tel: 041 851051. (40628) 460000

CHINA

TEACHING POSTS IN CHINA. The British Educational Trust is recruiting teachers for its client in China. Minimum qualifications: degree plus RSA. Prospective teachers must have 2 years experience. One year contracts will be offered by the client. Please send letter of application and CV to the address below. On receipt further information will be provided. Mr Lewis, Educational Division, British Educational Trust, The Lodge, Red Cross Lane, Cambridge CB2 8DX. (24995) 460000

CHRISTIAN TEACHERS

FOR AFRICA. The teaching of Biology, Chemistry, Agriculture, TEFL, Arts and Commercial Subjects in Secondary Schools. Secondary teacher of the blind and Cerebrally Handicapped also needed.
Volunteer terms: two year contracts, air fares, preparation courses, insurance and overseas allowances provided. Apply to: Volunteer Missionary Movement, 81, Abchurch Lane, London EC4N 3AB. Tel: 0753 24953. (17282) 460000

EGYPT

THE BRITISH INTERNATIONAL SCHOOL.
HEAD OF THE PRIMARY DEPARTMENT.
This well established school invites applications for this post which will be from the 1st January 1988. Applicants should have experience in a post of special responsibility and ideally be able to offer expertise in current developments in the teaching of Mathematics and/or Science.
Terms: An attractive tax-free salary is offered with free accommodation, annual return air fares and expense allowance. Two year contract, renewable.
Letters of application copying c.v. with names and addresses of two referees and a recent photograph should be sent to: The Headmaster (BIC), 20 Connaught Park, Lisburn, Co. Dublin, N. Ireland BT26 3AG. (0276 3111) 460000

FINLAND

A private School of Languages for Children is seeking for TEACHERS OF ENGLISH to start August the 5th 1987. Good physical accommodation and school. Apply with c.v. Tel. and photograph to: The English School of Languages, P.O. Box 100, 00101 Helsinki, Finland. (09 5527) 460000

GREECE

EFL teacher required for private school in Athens. Apply to: Mrs C. Maniatis, Mieras Asias 58, Hellenic Centre, Greece. Tel: Athens 821711. 460000

IRELAND

MARKET INVESTMENT. A private school in Dublin is seeking for TEACHERS OF ENGLISH to start August the 5th 1987. Good physical accommodation and school. Apply with c.v. Tel. and photograph to: The English School of Languages, P.O. Box 100, 00101 Helsinki, Finland. (09 5527) 460000



King Fahd University of Petroleum & Minerals DHAHRAN, SAUDI ARABIA

English Language Centre

Since 1963 the E.L.C. has been responsible for preparing approximately 1000-1400 male students per year for study in all-English-medium technical courses leading to the B.S. Degree in science, engineering or management. The Centre currently employs some 70 teachers (British, American, Canadian, Australasian and Irish) and is expected to expand. The programme is biased towards English for Academic Purposes. Well-equipped language labs, 5 audio visual studios and 60 IBM PCs for CALL use form part of the technical equipment available.

We have opportunities for well-qualified, committed and experienced teachers of English as a Foreign Language as of September 1987. Applicants should be willing to teach in a structured, intensive programme which is continually evolving and to which they are encouraged to contribute ideas and materials.

QUALIFICATIONS: 1. M.A. in TEFL/ESL or Applied Linguistics. 2. A one-year, full-time postgraduate diploma in TEFL/ESL from a recognised University.

EXPERIENCE: Minimum two years' teaching experience in TEFL/ESL overseas.

STARTING SALARY: Competitive salaries depending on qualifications and experience. Details at interview time. Salaries free of Saudi taxes.

ADDITIONAL BENEFITS:

1. All appointments are either single or married status.
2. Rent-free, air conditioned furnished accommodation. All utilities provided.
3. Gratuity of one month's salary for each year worked, payable on completion of final contract.
4. Two month's paid summer leave each year.
5. Attractive educational assistance grants for school-age dependent children.
6. Transportation allowance.
7. Possibility of selection for University's ongoing Summer programme and evening programme with good additional compensation.
8. Outstanding recreational facilities.
9. Free air transportation to and from Dahrhan each year.

Contract: For two years - renewable.

DEAN OF FACULTY & PERSONNEL AFFAIRS
KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DEPT: 660/GRD/8704 DHAHRAN 31261
KINGDOM OF SAUDI ARABIA

SAUDI ARABIA - JEDDAH

LECTURERS - ENGLISH LANGUAGE

(Re-advertisement. Previous applicants will be reconsidered)
WES has been asked to recruit 6 EFL Lecturers to teach a Basic English Course to Saudi Arabian Students training for Port Management.

Salary: 78,000 Saudi Riyals per annum
3 return air fares to the UK per year
Free bachelor accommodation and medical facilities

Candidates should be graduates (English or Modern Languages) with a teaching and TEFL qualification. Minimum of 3 years experience. Age range 25-50. Knowledge of Arabic an advantage. Posts available immediately.

For further details and an application form write to:

The Director, World-wide Education Service, Strode House, 44-50 Osnaburgh Street, London NW1 3NN. Tel: 01-387 9228.

Interviews to be held as soon as possible.



THE ENGLISH INTERNATIONAL SCHOOL OF PADUA

invites applications from suitably qualified and experienced

PRIMARY SCHOOL TEACHERS

for the post of Reception Class Teacher in this new international school, starting September 1987.

Interviews will be held in London in July, please write, with c.v. and a telephone number, to: The English International School, via Savonarola 203, Padua, Italy.

OVERSEAS POSTS continued

GREECE

EFL teacher required for private school in Athens. Apply to: Mrs C. Maniatis, Mieras Asias 58, Hellenic Centre, Greece. Tel: Athens 821711. 460000

ITALY

INDEPENDENT INTERNATIONAL SCHOOL - ROME requires for September 1987 a TEACHER for GIRLS (PE/GAMES and ART). Duties will include organisation of extra-curricular activities. ROME is a co-educational independent day school (age-range 10-18) south west of the city situated on the Via Appia Antica. It is a branch of the International School of London.
Please apply in writing with curriculum vitae and the names and addresses of two referees to the Headmaster, The International School of London, Crowlands Road NW1 1TA. (17478) 460000

ITALY

Chief TEFL teacher with one year's experience required from September for one male teacher. Applications with full c.v. and photograph to: English Institute of Languages, Via C.D. Lofis 10, 66100 Chieti, Italy. (33791) 460000

JAPAN

ENGLISH LANGUAGE SCHOOL. Requires TEFL Teacher immediately. Qualifications: Degree or C. of Ed. plus TEFL training and experience. Hours: 25 per week. Salary: up to 5 years experience Yen 150,000 per month. 5 years and over Yen 180,000 per month. Free accommodation. Single air fare provided after completion 1 year contract. Return fare after completion 2 year contract.
Please send C.V. (stating Phone No. 1 two passport photos and copies of qualifications to: Mr K. Morimoto, 3-25-1 Chomei Hiyashihata, Kure City, Hiroshima Prefecture Japan 737. (35338) 460000

KUWAIT

PROGRESSIVE SCHOOL IN KUWAIT. HEAD OF HISTORY/IOA GCSE and new GCSE syllabus. PRIMARY TEACHERS - TEFL experience an advantage. Tax free salary, free furnished air-conditioned accommodation and annual flight home. Please forward full C.V. recent testinomial, name & addresses of two referees plus telephone numbers and a recent photograph to: The Principal, P.O. Box 4898, Safat 140643 Kuwait. 460000

Posts Overseas

Malaysia

DIO Manager, The British Council Language Centre, Penang

Duties: the appointee will be responsible for the professional, administrative and financial management of the English Language Centre.

Qualifications: candidates should have a TEFL qualification (preferably RSA Dip TEFL or PGCE TEFL) and, preferably, MA in Applied Linguistics/TEFL and 5 years' TEFL/ESL experience including 2 years' in a senior post. Previous DIO and management experience desirable.

Salary: M4,660 per month rising by annual increments to M8,050 per month (M4.12 - £1).

Benefits: airfares; baggage allowance; settling-in allowance; medical scheme; children's school fees; superannuation; passage-paid leave.

Contract: 2 year contract from mid-August 1987.

Closing date: 26 June 1987.

Reference: 87 D 897.

United Arab Emirates

Al Nahda National Schools, Abu Dhabi

Post 1: male Biology and Chemistry teacher for 'O' and 'A' level students aged 15-18.
Post 2: male Chemistry teacher for 'O' and 'A' level students aged 15-18.

Post 3: female Mathematics teacher for 'O' and 'A' level students aged 12-18 and preparatory classes.

Post 4: female Mathematics and Computer Studies teacher for students aged 12-17 at 'O' level plus two previous classes.

Qualifications: candidates should be either single or married teaching couple without children, aged 25-35, native English speakers, with British or equivalent qualifications in the appropriate degree subject and a teaching certificate or B Ed and at least three years' experience.

Candidates must be available for a September start.

Salary: Dhs 36,000 - Dhs 39,000 per annum, free of local tax (£1 = Dhs 6.9 approx).

Benefits: free furnished accommodation; cost of living allowance of Dhs 18,000 per annum; annual passage-paid leave; terminal grant; baggage allowance.

Contract: for 2 years, renewable by mutual agreement.

Closing date for applications: 3 July 1987. Please telephone 01-430 8011 ext 3149 or 3323 for details and an application form.

Reference: 87 A 84-877.

Key English Language Teaching Scheme

The KELT scheme is part of Britain's Aid Programme to developing countries.

Burundi

Post 1: Lecturer in English Language and ELT Methods, University of Burundi. Duties: to teach at Licence level up to 200 hours p.a. main EL skills and methodology courses; supervise teaching practice and final year dissertations; develop teacher training course and, if appropriate, advise on content of new ELT methodology courses; participate in in-service teacher training seminars; co-ordinate TCTP and BPP.

Post 2: ELT Adviser in in-service teacher education and English for scientific and technical purposes, Ministry of Education. Duties: in collaboration with English sections of the curriculum development and in-service training departments of the Ministry (BEPE, BEET) to develop in-service teacher training support; mini seminars for 'animation pédagogique'; advise as appropriate on new BEPE materials; development of teachers guide; co-ordinate TCTP and BPP.

Qualifications: both posts: UK citizens with a British educational background; first degree and MA in Applied Linguistics/TEFL; at least 5 years' ELT experience, preferably in Francophone Africa. Good French essential.

Post 2: experience in ESP and materials development desirable.

Salary: Post 1: £10,988-£13,181 p.a. Overseas allowances: £4,271-£11,816 p.a. depending on salary levels and marital status.

Post 2: £12,268-£17,093 p.a. Overseas allowances: £3,937-£11,167 p.a. depending on salary and marital status.

Date of appointment: September 1987. Closing date for applications: 14 July 1987.

Reference: 87 K 8-07.

Benefits for the above post: salary free of UK income tax; free family passages; children's education allowances and holiday visits; free furnished accommodation; outfit allowance; baggage allowance; medical scheme; employer's contribution to a recognised superannuation scheme or an allowance of 11% of salary in lieu.

For further details and an application form, please write, quoting the post reference number, to: Overseas Educational Appointments Department, The British Council, 45 Davies Street, London W1J 2AA.

Salary: Post 1: £10,988-£13,181 p.a. Overseas allowances: £4,271-£11,816 p.a. depending on salary levels and marital status.

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Government of BRUNEI DARUSSALAM

The Curriculum Development Centre of the Department of Education invite applications from suitably qualified candidates for the posts of

EDUCATION OFFICER in the following disciplines

- a) English
- b) Geography
- c) History
- d) Mathematics
- e) Combined Sciences (Biology/Chemistry/Physics)

Applicants should possess a Bachelor Degree, with Honours, in one of the above disciplines from a recognised University together with a post graduate Diploma in Education and a minimum of 5 years teaching experience at Primary and Secondary levels. A Higher academic qualification is desirable.

Terms of Appointment

The initial contract is for 3 years, renewable subject to mutual agreement.

The basic Salary, depending on qualifications and experience, will be within the range of £7,670 to £14,330 p.a. In addition there is an annual bonus and a 25% tax free gratuity on the successful completion of contract.

Other benefits include: free passages; children's education allowances; generous paid leave, subsidised housing and an interest-free car loan.

Notes: The salary quoted is based on an exchange rate of £1 = B\$ 3.55 as at 15th May 1987. There is no personal income tax in Brunei Darussalam at present.

For an application form please write to, or contact:

The Brunei Darussalam High Commission, Recruitment Unit,
49 Cromwell Road, London SW7 2ED.
Telephone: 01-581 0521 Extension 34.

Closing date for applications - 6th July 1987. Only shortlisted candidates will be contacted.

Teacher

U.K.-style Primary School Saudi Arabia
c£11,500

The National Guard King Khalid Hospital in Jeddah is one of the most prestigious medical complexes in the Kingdom. It employs an international staff, many of whom have their families with them, and for this reason the complex includes a U.K.-style primary school which currently has 80 pupils and a 25-place crèche.

To complement the staff at the school, which is excellently equipped and fully air-conditioned, an experienced female teacher is now being sought for a mixed ability, vertically grouped class of twenty, 6 to 8 year olds. The children are all English-speaking and all of the teaching staff, including the Head Master, are British.

Trained in the U.K. and with a Cert. Ed. or a B. Ed., you must have had at least five years' experience of teaching top infants or lower juniors and should be able to show evidence of continuous up-dating in primary education. You should also be able to demonstrate a high level of enthusiasm for both classroom work and extra-curricular activities. Previous overseas experience and a familiarity with vertically-grouped classes would both be advantageous.

In addition to a tax-free salary of c.£11,500, you will enjoy excellent conditions of service, including free accommodation, the use of comprehensive leisure facilities, free medical care and three free trips to the U.K. each year.

Write with full career details to: Aubrey Magill, PER International, Box House, 4-12 Regent Street, London SW1Y 4PP.

PER INTERNATIONAL

OVERSEAS POSTS

PAPUA NEW GUINEA

INTERNATIONAL HIGH SCHOOL
A School of 100 students from 40 Nations with 100 teachers. Entrance level: 11th Grade. Teaching from 1988. In particular, emphasis on English, Mathematics, and Science. Applications close 31st July. Interviews in UK July. For further information ring 01753 215665. (24895) 460000

MINISTRY OF DEFENCE
SERVICE CHILDREN'S EDUCATION AUTHORITYVacancies for
Secondary Teachers
- January 1988S.1. EXPRESSIVE ARTS - DRAMA
Prince Rupert School, Rinteln

A teacher is required to join the newly formed Department of Expressive Art. The successful applicant will be responsible for teaching Drama throughout the school and strengthening links with Art and Music curricula. A practical interest in Music desired.

S.2. ENGLISH
Cornwall School, Dartmouth

2 teachers are required to join a department of 7 to teach up to GCSE level with possibly some CPVE work.

S.3. HISTORY
King's School, Gutersloh

A qualified graduate is required to teach partly within the framework of integrated humanities. Applicants should have 'A' level experience.

S.4. PHYSICS/CHEMISTRY
King's School, Gutersloh

Approved record of success in teaching Physics to 'A' level is required. Experience of GCSE Chemistry and interest in Cross Curricular links should be demonstrated.

S.5. ART
Prince Rupert School, Rinteln

A teacher is required who is able to offer and develop Ceramics and Textile Crafts as well as teaching the traditional content of the subject up to GCSE level.

CONDITIONS OF SERVICE

Salary will be in accordance with the Education (School Teachers' Pay and Conditions of Service) Order 1987. In addition, the London Area Allowance is payable. Superannuation - Normal rights are safeguarded.

Foreign Service Allowances/Cost of Living Allowances. A tax free allowance is payable. Further information will be forwarded to interested applicants.

Accommodation is normally provided rent free.

All applicants must be resident in the United Kingdom, where they have recently gained at least two years' teaching experience in a similar post to that for which they are applying. They should preferably be under 47 years age at the start of an engagement.

The Civil Service is an equal opportunities employer.

Requests for application forms and further details should be made in writing to:

Service Children's Education
Authority 2a, MOD/778, HQ
DAED, Court Road, Egham, London
SE9 5NR. (Tel: 01-854 2242 Ext.
4724/4206)

The closing date for completed application forms is Friday 3 July 1987.



SPAIN
Vacancies for E.F.L. teachers and Head of Studies, October 1987. Immediate needs qualified teachers in English, Spanish, French, German, Italian, Portuguese, Russian, and Chinese. TEFL qualification desirable. Knowledge of Spanish essential. Applications by e-mail, with full curriculum vitae, references, and a recent photograph, to: The Principal, International School, 106 Piccadilly, London W1A 0BB. Tel: (01) 248955. 460000

SPAIN
THE ENGLISH MONTESSORI SCHOOL
Madrid. A British Mixed Day School. N.O.H. 500. Ages 3-14 Yrs. Required:

1. A teacher for the 3-6 age range.

2. A teacher for the 7-9 age range. Interest in primary mathematics or BSC accountants would be an advantage.

3. 2 teachers for the lower secondary section with interest in science.

Teaching in private bilingual education abroad is a demanding job. Only qualified, adaptable teachers, with at least two years' teaching experience should apply. To: The Headmaster, T.E.M.S., 28023 Madrid.

Please include a C.V. and the telephone number of two referees. Interviews will be held as soon as possible.

This is a repeat of a previous advertisement. Previous applicants should not re-apply. (25721) 460000

SPAIN
E.F.L. (Spanish) require TEFL teachers for their centre in Huelva for October. Interview held in London in August. Write CV with recent photo to: Buchanan's, 100 Avenue 3, Huelva, (35849) 460000

SPAIN
T.E.F.L. with knowledge of Spanish and experience in teaching English as a second language. Madrid Province, Spain. Contract, October to June.

Apply to: Mrs. N. S. 00767, Priory House, St. John's, Nueva Andalucia, Marbella, 29600 Marbella. (24413) 460000

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Apply to: Mrs. N. S. 00767, Priory House, St. John's, Nueva Andalucia, Marbella, 29600 Marbella. (24413) 460000

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NATIONAL FOUNDATION FOR EDUCATIONAL RESEARCH IN ENGLAND AND WALES



Field Research Services RESEARCH ADMINISTRATIVE OFFICER

Post No. OFR04
Salary up to £13,080

The NFER is the country's major educational research institution. Its staff work in a friendly and informal atmosphere and its offices are surrounded by pleasant grounds on the outskirts of Slough.

Applications are invited for the post of Research Administrative Officer in the NFER's Field Research Services which provides the administrative services required for the Foundation's test development programmes, large scale type of research and data collection.

The successful applicants will be concerned with the collection of data for the Technical and Vocational Education Initiative (TVEI) Student/Teacher Database held at the NFER. In addition s/he will join a team concerned with enlisting the co-operation of schools, colleges and individuals in the administration of NFER test development programmes and large scale survey research.

Candidates should have a good Honours Degree, research and/or administrative experience and be able to write fluently and clearly. Knowledge of the educational system (particularly of TVEI) and experience in survey administration would be advantages.

Parental involvement in Children's Schooling RESEARCH OFFICER

Post No. P104

Applications are invited for the post of Research Officer on the Parental Involvement in Children's Schooling Project. The person appointed will work as a team with a Senior Research Officer and another Research Officer to investigate the variety of initiatives that have been established to increase the involvement of parents in their children's education. The research is being conducted through questionnaires in Phase 1 and case studies in Phase 2. Phase 1 of the research is now complete and Phase 2 will involve a detailed evaluation of a selection of representative schemes.

Applicants should have a good honours degree in a relevant subject, sound knowledge of research methods in the social sciences and the ability to write for publication. Experience in carrying out and writing up case study research and interviewing teachers, parents and pupils would be valuable.

The post is available as soon as possible and will run until 31st May 1989.

The Salary Scale is from £10,440 - £13,080 and placement will be according to qualifications and experience. Interviews will be held on Wednesday 22nd July for this vacancy only.

For application form and further particulars, please apply to the Personnel Office, National Foundation for Educational Research in England and Wales, The Mews, Upton Park, Slough, Berks SL1 2DD. Tel. Slough (0753) 74123. Closing date for return of completed application forms, no later than Friday 3rd July 1987. (40547)

Administration General

ADMINISTRATORS AND TEACHERS

Qualified and experienced personnel required for a B.C. recognised EFL school. Please apply: Oxford House College, 5 Oxford Street, London W1R 1BT. Tel: 01-734 3880. (40687) 500000

Miscellaneous

ALTERNATIVES FOR TEACHERS. Use professional skills in new employment. Careers in Writing and Publishing. Careers in TV. 'Careers in Radio'. £2.25 each. £2.25 all three. Dept. 3, Hamilton House, Publishing, Brixworth, Northampton. Access phone 0604 881889. (04153) 660000

PRACTISE YOUR LANGUAGE PAYING GUEST STAYS arranged in U.K., France, Germany, Spain and Italy. Also Form/Temp. All paid places in France. **GREAT CARE TAKEN WITH CHOICE OF FAMILIES.** Contact Mrs. Taittel, HOST & GUEST SERVICE, 3929 Kings Road, London SW5 2DZ. Tel: 731 2340. (37021) 660000

NORWICH MULTICULTURAL ADVISER required to assist with a multi-cultural Theatre in Education programme for Norfolk middle/secondary schools. Project dates: 3/10/87 - 18/12/87. £1,000 (no. hours to be agreed). Please send letter of application plus CV, SAE and names of two referees to: Mr. MCA, David Farmer, Director, The Break, St. William's Primary School, St. William's Way, Norwich NR7 0AJ. Equal Opportunity Employer. For further details phone (0603) 39963. (24468) 660000

The National Institute of Adult Continuing Education (England and Wales) DIRECTOR

NIACE requires a successor to Arthur Stock who retires on 30 April 1988.

The Institute seeks a person with substantial management experience and extensive knowledge of adult continuing education, a co-operative approach to leadership and a high level of communication skills.

Salary: NJC Chief Officer 17, currently £26554 - £29251

Further particulars from NIACE, Dept. H, 19b De Montfort Street, Leicester LE1 7GE

Closing date: 13 July 1987

NIACE is an equal opportunity employer.

Leicestershire

DEPARTMENT OF PLANNING AND TRANSPORTATION

ROAD SAFETY OFFICER

Salary Range Scale 4 £7,311 to £8,172 p.a. (pay award pending)

The tasks are to encourage teachers to implement a structured progressive programme of Road Safety Training in Primary and Secondary schools in an assigned area of the County, including participation in the development and preparation of teaching aids for use by teachers; to organise and provide structured cycle training; to direct and supervise part-time tutors; to contribute to the overall development of the work and success of County Road Safety teams.

Applicants should be qualified and experienced teachers.

A current full driving licence is essential. Car user allowance or car leasing facilities available. A home telephone allowance is payable.

Relocation expenses up to £2,460, plus lodging allowance may be payable in appropriate circumstances. Temporary housing could be available.

Application forms and further information obtainable by telephoning Leicester (0533) 316613, or by writing to the Director of Planning and Transportation, County Hall, Glenfield, Leicester LE3 8RJ. Closing date: Wednesday 8th July 1987.

EQUAL OPPORTUNITIES POLICY. Applications are welcome from people regardless of their race, ethnic origin, religion, sex, marital status or disability. Disabled applicants will be guaranteed an interview if suitably qualified and experienced, and supported by a recognised agency e.g. a R.D.D.

INFLUENCE DESIGN EDUCATION Up to £21,000 (under review)

As part of its brief to promote improved standards of design in British industry, the Design Council is increasingly directing its attention to the education and training of designers.

We now need someone with a good knowledge of the design education system and with managerial ability to lead the team responsible for implementing our policies in this field.

The starting salary will depend on experience and qualifications. In addition we offer an excellent non-contributory pension scheme and other benefits.

For further details and an application form please contact Miss Prue Beard, Personnel Manager, The Design Council, 28 Haymarket, London SW1Y 4SU

Telephone 01-839 8000 ext 4039

An equal opportunities employer

DESIGN OF LEARNING SYSTEMS

An experienced and suitably qualified person is sought to lead a small team which is the focus of expertise within the EITB on the design of learning systems, learning theory and training techniques.

The successful candidate for this post will hold a degree in psychology or other relevant discipline and will have considerable experience working in the fields of learning systems design of curriculum development. Experience gained in the field of engineering or technical education and training will be a distinct advantage.

The role requires keeping abreast of recent developments in the fields of learning design, learning theory and training techniques and disseminating that knowledge to staff throughout the EITB, by a wide variety of means of communication including written, informal spoken and formal seminars and courses to ensure that those involved in development of training programmes adopt suitable learner centred approaches.

The team also has a responsibility in the areas of methods of recruitment and selection and of assessment of skills and an awareness of these areas is also desirable.

The post is located at the EITB's Headquarters in Watford, but will require considerable travel in visiting other parts of the country.

The post is at Principal level and carries a good salary and conditions, including a car. Please send full details of telephone for an application form:



EITB
Engineering Industry Training Board

Personnel Department,
Engineering Industry Training Board,
41 Clarendon Road,
Watford,
Herts WD1 1HS
Telephone: (0923) 38441 ext. 443

MISCELLANEOUS VACANCIES continued

Primary Editor PUBLISHING DIVISION

The Schoolbooks Group of Cambridge University Press is expanding its educational publishing at primary and infant level.

We now require an editor to take responsibility for developing this area across the board. The successful candidate will be part of a team reporting directly to the Educational Director.

If you have primary publishing experience or several years primary teaching experience and an interest in publishing, energy, initiative, ideas and a capacity for hard work, please write and tell us how you would contribute to this expansion.

Starting salary for this post will be between £9,562 and £9,841, the point of entry dependent on relevant experience. The pension scheme and other terms and conditions of employment are excellent, and relocation expenses will be paid where appropriate.

Please write in detail to:
Mrs Christine Lawless, Personnel Manager



Cambridge University Press

The Edinburgh Building,
Shaftesbury Road, Cambridge
CB2 2RU, England

CAMBRIDGE NEW YORK NEW ROCHELLE MELBOURNE SYDNEY

THE TIMES EDUCATIONAL SUPPLEMENT
requires an

ADVERTISEMENT SALES EXECUTIVE

Ideally, you will be in the age range of 25 to 35 and possess a high standard of education.

While previous sales experience is not necessary you must have excellent persuasive communicative skills and be an enthusiastic self-motivator. The position is both challenging and rewarding as it entails discussing advertising and marketing plans with senior personnel in companies throughout England and Wales.

We offer a good salary, 6 weeks holiday, free BUPA membership and a pension scheme. A company car is also provided.

Please write, at the earliest opportunity, to Mr. John Ladbrook, Advertisement Manager, stating current salary and enclosing C.V.

The Times Educational Supplement,
Priory House, St. John's Lane, London EC1M 4BX

A Rewarding Career in Pharmaceuticals

Add your skills as a Teacher, your personality and our training to produce an intellectually stimulating career and new earning power!

SKILLS + PERSONALITY + TRAINING = REWARDS

- Communication
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- Presentation
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- Enthusiastic
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- Interest in people

- Selling skills
- Product knowledge
- Interactive Video
- Computer skills
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- Earnings to £12,000 plus bonus
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- Career Progression

Teaching and selling have a lot more in common than you might believe. Our Medical Representatives use many of the same skills in selling our products to the Medical profession as you do in educating your pupils — the difference lies in the rewards you will earn for your hard work.

If you have never thought about Medical Representation as a career, do it now. If you need more information about Searle and the careers we offer, find out about us in GET, GO, and the Sales and Marketing Casebook produced for graduates.

Our next training course, which lasts for up to 8 weeks, is scheduled to begin in September and vacancies are available throughout the U.K. We offer a structured training and development programme for the first two years with us which will equip you for promotion to the field sales management or marketing opportunities.

Please write to me for an application form and brochure.

D. J. Horton, Personnel Manager, Sales and Marketing,
G.D. Searle & Co. Ltd.,
Lane End Road,
High Wycombe, Buckinghamshire HP12 4HL
Tel: High Wycombe (0494) 21124

SEARLE
GOLD
CROSS

Educational Psychologists

LONDON WL
THE NATIONAL GUIDANCE CENTRE
CHILD PSYCHOLOGISTS
Full and part-time career opportunities for Child Psychologists to advise and help develop this newly established independent organization.
The EGC is a private consulting service to parents and professionals, within the field of child education and development.
Written applications, including CV, to Dr. Judith Haynes, The Educational Guidance Centre, 3 Devonshire Court, 26a Devonshire Street, London W1N 1RP by 15th July 1987. 500000 (24407)

Examiners

THE ASSOCIATED EXAMINING BOARD

The Board invites applications for the post of **CHIEF EXAMINER FOR PHILOSOPHY** (661) at ADVANCED LEVEL for the June 1988 examination. Duties to commence August 1987 as the person appointed will supervise marking in 1988.
Applicants should have a degree or equivalent qualification in a relevant subject, a minimum of four years recent relevant teaching experience and experience of examining.
Further information and application forms may be obtained from The Secretary General (AG), The Associated Examinations Board, Stag Hill House, Guildford, Surrey GU1 1HR by 15th July 1987. 500000 (139350)

LONDON & EAST ANGLIAN GROUP FOR GCSE EXAMINATIONS

East Anglian Examinations Board
London Regional Examinations Board

Applications are invited for the following posts for the 1988 series of GCSE examinations:
ASSASSINATOR
Drama.
Application forms and further particulars may be obtained from: D. H. Board, M.A., Secretary to the Board, 100 Wandsworth High Street, London SW18 4LE to whom completed forms should be returned not later than 30th July 1987. 500000

Further information and application forms may be obtained from The Secretary General (AG), The Associated Examinations Board, Stag Hill House, Guildford, Surrey GU1 1HR by 15th July 1987. 500000 (139350)

Further information and application forms may be obtained from The Secretary General (AG), The Associated Examinations Board, Stag Hill House, Guildford, Surrey GU1 1HR by 15th July 1987. 500000 (139350)

SUMMER VACANCIES

If you are looking for a challenging summer job working with children at one of our international residential camps, we have vacancies for

EFL TEACHERS SPORTS COACHES

We require enthusiastic graduates, suitably qualified, from early July.

We offer earnings of up to \$200pw plus full board and accommodation.

Please apply in writing with a full cv to: MB Reiser, Bsq, Buckswood International Summer School, Uckfield, East Sussex TN88 3PU

Haringey Education Service is conscious that, in general, teachers from black and minority ethnic backgrounds and bilingual teachers are under-represented in the teaching force. Applications from such teachers would be particularly welcome.

The same applies to women teachers, particularly for posts at a senior level in secondary schools and in certain curricular areas.

Haringey is an equal opportunity employer. We welcome your application, which will be considered on merit, irrespective of race, marital status, sex or any disability you may have.

Haringey

LANGUAGE RESOURCE CENTRE We are looking for Experienced Teachers

with initiative and enthusiasm to join a well established group who work from this Resource Centre. The establishment houses an extensive resource bank and acts as a development centre concerned with language use in Multilingual classrooms in Haringey Schools. The following posts are concerned with the education in English of bilingual pupils.

Vacancies exist for:
Scale 3 and Scale 2 posts in the Secondary and the Primary teams.

All LRC members work in support of teacher colleagues in mainstream classrooms and are actively involved with the collaborative development and delivery of curriculum in Multilingual classrooms. Further details are available on request.
All applicants must be experienced teachers with a recognised specialist qualification. In addition applicants are bilingual, particularly in Bengali and English; they will have a positive attitude. A commitment to the Authority's Equal Opportunities policies is essential.
Forms should be returned to: The Chief Education Officer, Education Office, 48 Station Road, Wood Green N22 4TY.

CLOSING DATE: 31 July 1987

Unless otherwise stated, application forms and further details may be obtained (e.g. a package) from Chief Education Officer, 48 Station Road, London N22 4TY and should be returned to this address.

London Allowance: £1,215 payable. Removet Expenses: 100% in approved cases for permanent posts.

Outdoor Education

HEREFORD

THE GRANGE CENTRE
Est. 1978. Situated close to River Wye at foot of Mendips. Offers a wide range of outdoor education courses for schools, colleges, universities, etc. Courses include: Adventure, Team Building, Problem Solving, etc. For further details write to: The Grange Centre, 100 Wye, Hereford HR5 1LP. Tel: 0497 824. 680000 (02381)

TUNBRIDGE WELLS
PURVIS CENTRE
Offers a wide range of outdoor education courses for schools, colleges, universities, etc. Courses include: Adventure, Team Building, Problem Solving, etc. For further details write to: The Purvis Centre, 100 Wye, Tunbridge Wells TN11 1LP. Tel: 0892 64157. 580000

Further information and application forms may be obtained from The Secretary General (AG), The Associated Examinations Board, Stag Hill House, Guildford, Surrey GU1 1HR by 15th July 1987. 500000 (139350)

Peripatetic Posts

KIRKLEES METROPOLITAN COUNCIL

DIRECTORATE OF EDUCATIONAL SERVICES

Re-advertisement

Ref: 1764

Required from Sept. 1987 or as soon as possible thereafter a suitably experienced teacher, SCALE 2, to be Head of Wind Instruments.

Previous applicants will be automatically considered.

Application forms and further details (i.e. a package) available from the Director of Educational Services (Ref. 1764), Oldgate House, 100 Oldgate, Huddersfield HD1 1JG. Tel: 0484 210000. Completed forms should be returned to the Director of Educational Services, 100 Oldgate, Huddersfield HD1 1JG. Tel: 0484 210000.

Kirklees operates an Equal Opportunity Policy. Details of which will be sent to all applicants (40599) 670000

LANCASHIRE COUNTY COUNCIL
An Equal Opportunities Employer welcoming applications from all sections of the community.

PERIPATETIC TEACHER OF WOODWIND INSTRUMENTS
Salary: Scale 1.

Required as soon as possible by the Instrumental Music Teaching Service. The post holder will be responsible for the delivery of the service in the community.

Application forms and further details from the Chief Education Officer, P.O. Box 61, Preston PR1 2ST. (445104) 670000

Closing date: 31 July 1987. (445104) 670000

SHEFFIELD CITY COUNCIL
Required in September 1987, or as soon as possible thereafter, for a full-time, qualified teacher of Violin/Cello.

Will teach solo at all ages and stages in both primary and secondary schools. There will be an opportunity to take part in the Music to Schools programme for one day per week.

An ability to teach other stringed instruments will be an advantage. Successful candidates will be offered an interview with the Music to Schools Service.

For a full and complete application form, please apply to: The Music to Schools Service, 100 Wye, Sheffield S1 1LP. Tel: 0114 2760000.

BOURNEMOUTH
BOURNEMOUTH SCHOOL OF MUSIC
Required in September 1987, or as soon as possible thereafter, for a full-time, qualified teacher of Violin/Cello.

Will teach solo at all ages and stages in both primary and secondary schools. There will be an opportunity to take part in the Music to Schools programme for one day per week.

An ability to teach other stringed instruments will be an advantage. Successful candidates will be offered an interview with the Music to Schools Service.

For a full and complete application form, please apply to: The Music to Schools Service, 100 Wye, Bournemouth BH1 1LP. Tel: 01202 330000.

BUCKINGHAMSHIRE
THE VALE SCHOOL
Required in September 1987, or as soon as possible thereafter, for a full-time, qualified teacher of Violin/Cello.

Will teach solo at all ages and stages in both primary and secondary schools. There will be an opportunity to take part in the Music to Schools programme for one day per week.

An ability to teach other stringed instruments will be an advantage. Successful candidates will be offered an interview with the Music to Schools Service.

For a full and complete application form, please apply to: The Music to Schools Service, 100 Wye, Aylesbury HP8 4LP. Tel: 0494 510000.

SPAIN
TEFL TEACHERS
Required for a full-time, qualified teacher of English as a Second Language.

Will teach solo at all ages and stages in both primary and secondary schools. There will be an opportunity to take part in the Music to Schools programme for one day per week.

An ability to teach other stringed instruments will be an advantage. Successful candidates will be offered an interview with the Music to Schools Service.

English as a Foreign Language

ACADEMY IN N. SPAIN Needs

Teachers of English as a Foreign Language. Details from M. Fowler, 100 Wye, Bournemouth BH1 1LP. Tel: 01202 330000.

ANGLO-WORLD EDUCATION LTD.
is still recruiting Teachers/ESL Teachers for its Junior International Holiday Courses at Reading. Appointments to run from 1st to 15th July for 5/6 weeks.

Also ONE Director of Studies with EFL Qualifications.
For further information and Application Form please contact: Mr. Gerald Wills, Principal, Anglo-World Education Ltd., Bourneville, Birmingham B15 2JG. Tel: 021 700000.

ABSOT
HEATHFIELD SUMMER SCHOOL
Energetic and experienced teachers, willing to assist with social/personal activities required for residential courses for girls aged 10-18 from 1st July to 15th August 1987.

Also ONE Director of Studies with EFL Qualifications.
For further information and Application Form please contact: Mr. Gerald Wills, Principal, Anglo-World Education Ltd., Bourneville, Birmingham B15 2JG. Tel: 021 700000.

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Application forms and further details from the Chief Education Officer, P.O. Box 61, Preston PR1 2ST. (445104) 670000

Closing date: 31 July 1987. (445104) 670000

SHEFFIELD CITY COUNCIL
Required in September 1987, or as soon as possible thereafter, for a full-time, qualified teacher of Violin/Cello.

Will teach solo at all ages and stages in both primary and secondary schools. There will be an opportunity to take part in the Music to Schools programme for one day per week.

An ability to teach other stringed instruments will be an advantage. Successful candidates will be offered an interview with the Music to Schools Service.

For a full and complete application form, please apply to: The Music to Schools Service, 100 Wye, Sheffield S1 1LP. Tel: 0114 2760000.

BOURNEMOUTH
BOURNEMOUTH SCHOOL OF MUSIC
Required in September 1987, or as soon as possible thereafter, for a full-time, qualified teacher of Violin/Cello.

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For a full and complete application form, please apply to: The Music to Schools Service, 100 Wye, Bournemouth BH1 1LP. Tel: 01202 330000.

BUCKINGHAMSHIRE
THE VALE SCHOOL
Required in September 1987, or as soon as possible thereafter, for a full-time, qualified teacher of Violin/Cello.

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For a full and complete application form, please apply to: The Music to Schools Service, 100 Wye, Aylesbury HP8 4LP. Tel: 0494 510000.

SPAIN
TEFL TEACHERS
Required for a full-time, qualified teacher of English as a Second Language.

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English as a Second Language

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